Unit 9

Activity Book | Grade 5

Chemical Matter

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Activity Book

Amplify Core Knowledge Language Arts

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Unit 9
Chemical Matter
Activity Book

This Activity Book contains activity pages that accompany the lessons from the Unit 9 Teacher Guide. The activity pages are organized and numbered according to the lesson number and the order in which they are used within the lesson. For example, if there are two activity pages for Lesson 4, the first will be numbered 4.1 and the second 4.2. The Activity Book is a student component, which means each student should have an Activity Book.

ACTIVITY 1.1

NAME:_____ DATE:_____

WELCOME TO FOSSIL CAMP

Working individually, answer the questions below in the space provided.

1. Below are three images. Which of these is closest to the setting described in the text? Provide quotes from the text to support your answer.

NAME:_____ DATE:_____

2. **Look at the sentences below.** Circle those that you think describe the setting of this text. In each case, provide a word or term in the text that supports your answer.

   "Lonely and empty"

   "An extraordinary edifice made by man"

   "Shaped by rain and storms"

   "Chains of rocky hills that have almost no plants or life on them"

   "Lush and green"

Challenge

1. The badlands are the setting for this story. Does that mean the tents are not the setting? Give reasons for your answer.

2. Why do you think the text spends so much time describing the setting? What effect does that have on you, the reader?

ACTIVITY PAGE 1.2

NAME: _____ DATE: _____

VOCABULARY

Working as a class, complete the table below, using Chapter 1 of the *The Badlands Sleuth* for your answers.

TERM OR IDEA	DEFINITION OR EXPLANATION
Matter	
States of Matter	
Physical Property	
Mass	

ACTIVITY PAGE 1.2

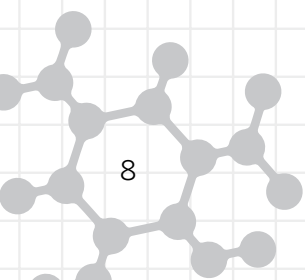
NAME: _____ DATE: _____

EXAMPLES FROM TEXT	OTHER EXAMPLES

ACTIVITY PAGE 1.3

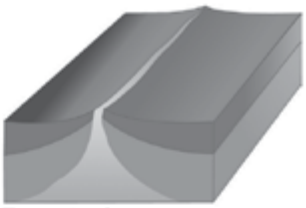
NAME: _____ DATE: _____

Think of an object that qualifies as matter. Using the table you created in Activity Page 1.2 as a guide, describe the properties of the object, just as a scientist would. But don't name or identify the object! As you write, think about how to organize your information.



THE CHANGING EARTH–GEOLOGY READER

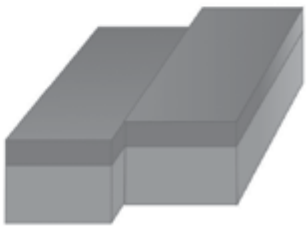
A Matter of Time


Tectonic plates move apart.

At some boundaries, tectonic plates are moving apart. As the plates separate, molten rock flows up from the mantle into the space between them, creating new crust. Mid-ocean ridges are an example of this type of plate interaction. Tectonic plates along the mid-ocean ridge in the Atlantic Ocean are moving apart at a rate of about 0.8 to 2 inches per year. That may not seem like much, but it adds up. Two hundred million years ago, the landmasses of North America and Europe were joined. So were South America and Africa. Thanks to separating plates, these continents now lie on opposite sides of a vast ocean.


Tectonic plates collide.

At other plate boundaries, tectonic plates are **colliding**, or crashing together. In some places, colliding plates slowly crash into each other. The crust at their edges gradually crumples and is pushed higher and higher, creating mountains. In other places, one of the colliding plates slides under the other. Two plates are colliding this way along the western coast of South America. A heavier oceanic plate is sliding under a lighter continental plate. Scientists call this process **subduction**. Subduction has created a deep ocean trench off the coast of Chile and Peru. It has also had a role in creating the towering Andes Mountains along the western edge of South America. Similar plate interactions have formed mountain ranges throughout Earth's long history.


Tectonic plates slide sideways past one another.

Finally, tectonic plates slide sideways past one another. It's never a smooth process. Plate edges press together hard. They often get stuck while the

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pressure keeps building. Eventually the pressure gets too great. The stuck edges break free, causing the plates to jerk past each other.

Providing the Answers

The theory of plate tectonics answered many questions in geology. It explained how Wegener's Pangaea broke apart. It explained how the continents have been slowly rearranged over millions of years. The movement of the plates also explained mid-ocean ridges, deep ocean trenches, patterns in the locations of mountains, and many other features on Earth's surface. The theory has become the cornerstone of modern geology.

As plates move, interesting things happen. Most of the time, they happen incredibly slowly. Sometimes, though, the effects of plate movements are sudden and dramatic. Think earthquakes and volcanoes!

Core Conclusions

You may never have heard of the Danish scientist Inge Lehmann. Among seismologists, however, she is famous. Around 1900, scientists thought the earth had just three layers: an outer crust, a solid mantle, and a liquid core. Lehmann studied seismograph records of earthquakes. She analyzed how seismic waves changed as they traveled through Earth's interior. Lehmann collected thousands of records organized in boxes—there were no computers back then! She saw patterns in how seismic waves behaved as they moved through Earth. Lehmann concluded that Earth's core has two parts: a liquid outer core and a solid inner core. In 1936, she announced her findings and changed our view of Earth!

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ACTIVITY PAGE 2.1

NAME: _____ DATE: _____

Look again at the second half of Chapter 1 of *The Badlands Sleuth*. In your pairs, compare this text with the Geology text and provide reasons why you might consider *The Badlands Sleuth* text either informational or literary. Give specific examples in your answer.

Reasons the Text Is Informational Like the Geology Text

Like the Geology text, it: _____

_____

_____

_____

For example: _____

_____

_____

Unlike the first half of Chapter 1 of *The Badlands Sleuth*, it:

_____

_____

_____

For example: _____

_____

_____

ACTIVITY PAGE 2.1

NAME: _____ DATE: _____

Reasons the Text Is Literary Like the First Half of the Chapter

Like the first half of the chapter, it: _____

_____

_____

_____

For example: _____

_____

_____

Unlike the Geology text, it: _____

_____

_____

_____

For example: _____

_____

_____

NAME: _____ DATE: _____

Which Is It?

Do you think this text should be classed as narrative or informational? Use your examples above to provide an answer. (If you disagree with your partner, it is OK for you to write something different.)

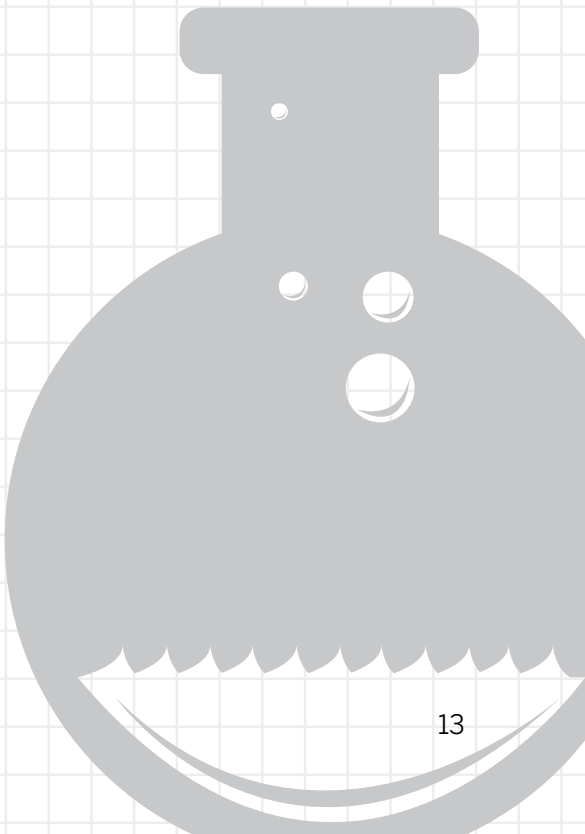
_____

_____

_____

_____

_____



ACTIVITY PAGE 2.2

NAME: _____ DATE: _____

WRITE A NARRATIVE CONTAINING INFORMATIONAL CONTENT

Your task is to rewrite the Geology content in Activity Page 1.3 in the narrative form of *The Badlands Sleuth*.

AS YOU WRITE, YOU SHOULD CONSIDER:

- The characteristics of the text you identified the previous day. What does the "narrative form" of *The Badlands Sleuth* mean?
- The content. Although you are rewriting in narrative form, the content must still be accurate and clear.
- What you need to include. You cannot copy and paste all the information—you should choose what to present and how, while explaining the main ideas in the text.
- Your setting and plot. Be as imaginative as you like! If you wish, you can also use devices from *The Badlands Sleuth*—for example, the author used questions from the campers to provide a context for the information Tess provides.
- You should plan out your work for at least five minutes before you write—think about the organization of the text and your plot!

ACTIVITY PAGE 2.2

NAME: _____ DATE: _____

ACTIVITY 2.3

NAME: _____ DATE: _____

EXPAND THE SENTENCES

Expand the sentences below. Think about descriptive details you can add, and what additional information they will provide the reader. You might want to brainstorm some adjectives first. Remember, you should still have only one sentence at the end.

1. Amy walked into her tent

_____

_____

_____

2. Matt listened to Tess's explanation

_____

_____

_____

3. I drove round the rocks

_____

_____

_____

NAME:_____ DATE:_____

-ment: Suffix Meaning State Of Being

Choose the correct word and combine it with the suffix *–ment* to complete the sentence.

1. Winning the Nobel Prize was a great _____.
   (amaze, achieve, align, excite)

2. The idea of finding a new fossil caused great _____.
   (disagree, judge, entertain, excite)

3. After 45 years of work, Mr. Smith was looking forward to _____.
   (pay, accomplish, move, retire)

4. I want to be a police officer because I'm interested in

   law _____.
   (endear, encourage, enforce, entertain)

5. With a glow of _____ in his eyes, Matt ran down the beach.
   (achieve, align, excite, entertain)

Challenge:

Write three sentences using a word with the suffix *–ment*. They can be about anything!

_____

_____

_____

ACTIVITY 2.5

NAME: _____ DATE: _____

ANALYZE DETAILS

In pairs, answer the questions below. After answering each question, say whether you think the text detail is literary or informational, and why.

Question	Answer	Is this a literary or informational detail? Give reasons for your answer.
What series of steps are required to excavate the bones?		
What clue do you get about Julian's personality from his questions?		
Why does Daria say she wants her phone, and why does she really want it?		

NAME:_____ DATE:_____

Can you be a dinosaur detective?

Read the clues below and see if you can decipher the origin of the dinosaur's name.

- Acheroraptor temertyorum was found in Hell's Creek in Montana.
- In Greek mythology, there is a river in the underworld called Acheron. The Greeks did not have hell–but they did have the underworld, where people were punished or rewarded depending on their lives.
- Raptor comes from the Latin word raptere, which means "to plunder or steal."
- James and Louise Temerty have been major supporters of the University of Ontario, where the dinosaur is displayed.
- Sometimes paleontologists, or those who supported or funded their work, get new fossils named after them.

My Theory

1. They used the name **Acheroraptor** because

_____

_____

_____

2. They used the name **temertyorum** because

_____

_____

_____

ACTIVITY PAGE 3.2

NAME: _____ DATE: _____

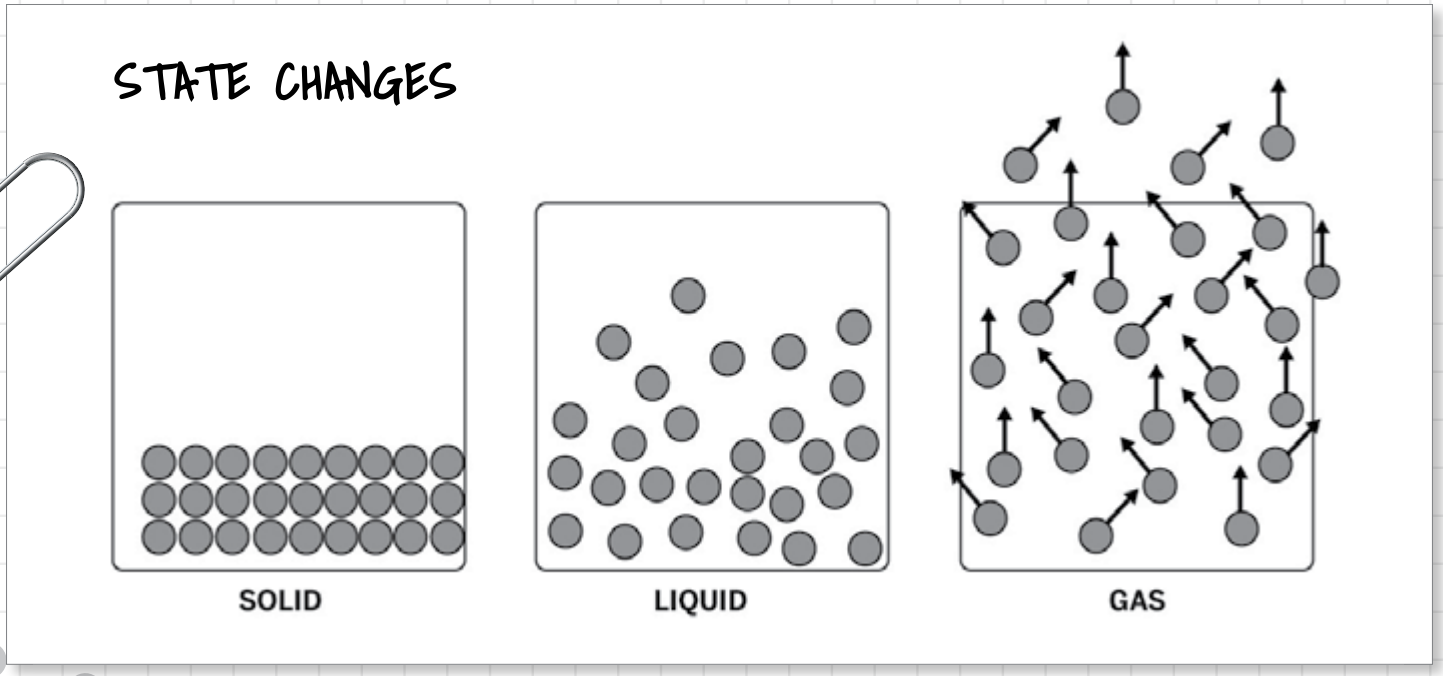
THE WATER CYCLE

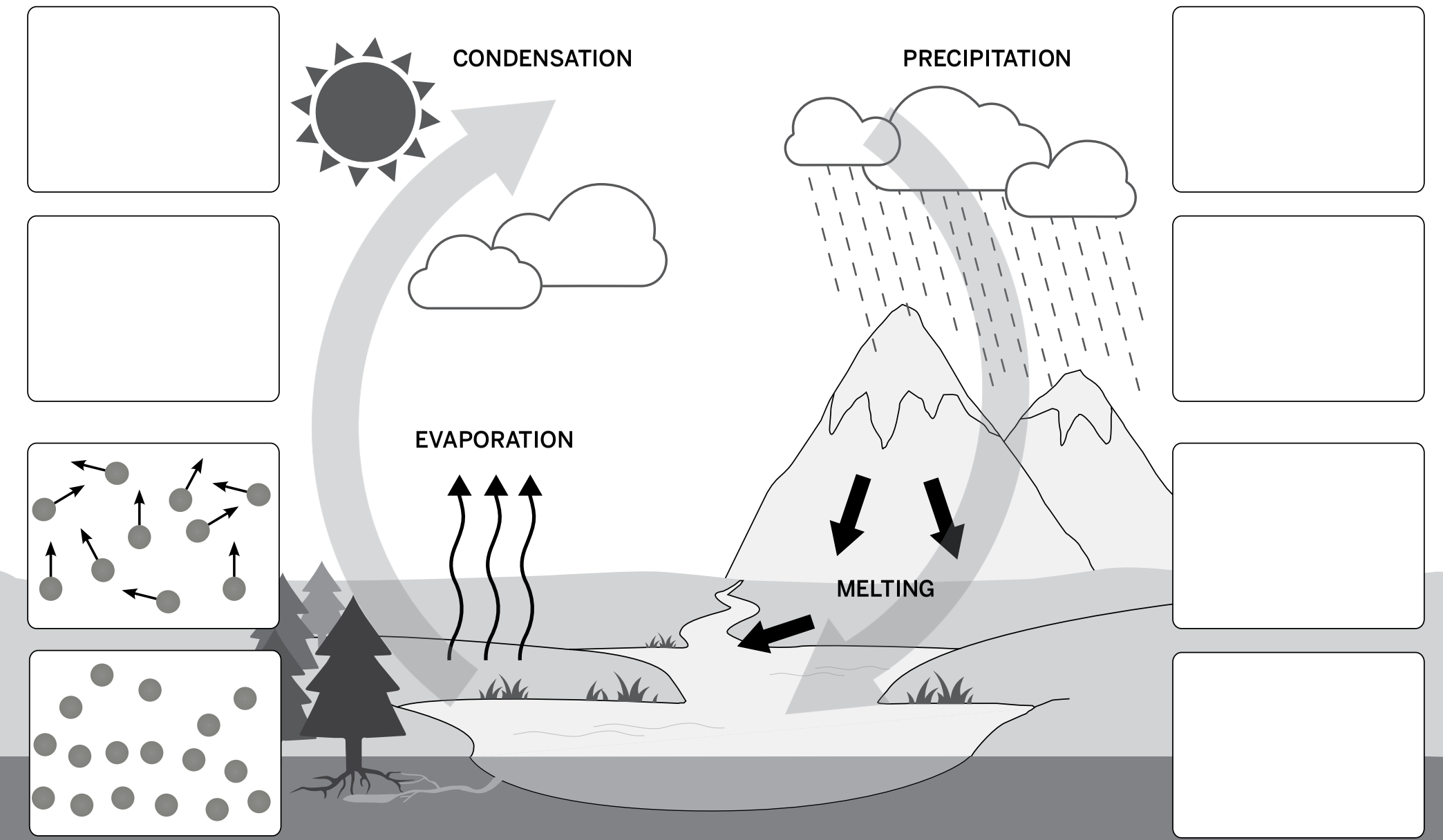
The diagram shows a water cycle–which describes how water moves around the earth in different states.

Using the content from the Reader, and the diagrams on the following page:

1. Annotate this diagram by describing how water changes state through the cycle.
2. Draw the appropriate diagrams next to each part of the water cycle to show the changes in state. Draw arrows between them to show the change that is occurring.

The first example has been completed for you.




CONDENSATION
PRECIPITATION
EVAPORATION
MELTING

ACTIVITY 3.3

NAME:_____ DATE:_____

CHARACTER MAPS

AMY

NAME:_____ DATE:_____

AMY

ACTIVITY 3.3

NAME: _____ DATE: _____

TESS

NAME: _____ DATE: _____

TESS

ACTIVITY 3.3

NAME: _____ DATE: _____

JULIAN

ACTIVITY 3.3

NAME: _____ DATE: _____

JULIAN

ACTIVITY 3.3

NAME: _____ DATE: _____

KRISTAL

ACTIVITY 3.3

NAME:_____ DATE:_____

KRISTAL

ACTIVITY 3.3

NAME: _____ DATE: _____

DARIA

NAME: _____ DATE: _____

DARIA

ACTIVITY 3.3

NAME: _____ DATE: _____

FELIX

NAME:_____ DATE:_____

FELIX

ACTIVITY 3.3

NAME: _____ DATE: _____

SQUIRRELS

NAME:_____ DATE:_____

SQUIRRELS

ACTIVITY 3.3

NAME: _____ DATE: _____

SUV

NAME: _____ DATE: _____

SUV

NAME: _____ DATE: _____

TESS'S RULES FOR OBSERVATION

When I started studying chemistry, the first thing I had to learn was how to notice things properly. My rules for observation are:

1. Look carefully at everything.
2. Record what you can: mass, color, texture, state.
3. Look at how things change. If you heat it up, what happens? If you add another substance, what happens?
4. Ask, "Does what I observe match the theory?" Great scientific discoveries happen when scientists notice things not behaving the way they thought those things would. Do you see anything strange?
5. If you have a theory, test it across as many examples as you can. The more evidence you have to back up your ideas, the better.

TRY APPLYING THE RULES TO THIS EXAMPLE:

If I wanted to understand the properties of salt, I would

_____

_____

_____

INSPECTOR ELLIS'S RULES FOR DETECTION

There's a reason I'm Amy's favorite detective. I am brilliant. No case goes unsolved if Inspector Ellis is called in (well, there was that one case with the umbrella and the penguin, but I don't like to talk about it).

Obviously, you can't become as brilliant as I am (Did I mention I was brilliant?) overnight. But you can start down the long, lonely path of becoming a great detective by following my rules of observation.

1. Look at everything. Write down what you see.

2. Collect what you can and analyze it—fingerprints, lipstick stains, everything (you can send it to the chemistry people in the lab).

3. If you've seen the crime scene before, compare what you see now with what you saw before.

4. Does anything seem out of place or unusual?

5. Interview everyone. Do their stories match up? Does anything seem out of place?

6. Is anyone behaving strangely? You can't arrest someone for being nervous, but it might give you an idea of what to look for and where.

7. Do you have a theory? Can you test it? For example, in my last case, I thought it was possible the thief had stolen out through an air vent. I tested if this was possible by sending my sidekick through the vent. I was wrong, and my sidekick became stuck, but I'd never have known this without testing my theory! (He quit later; some people can't cope with the challenge of this job.)

ACTIVITY 4.1

NAME: _____ DATE: _____

As you read Chapter 4 in your pairs, one of you should answer the Detective questions below, and the other the Scientist questions. When you have finished, explain and discuss your answers with your partner.

Detective Questions:

1. What are we told about Dr. Forester that indicates she isn't "very happy"?

2. What did Kristal do that indicated she was "secretive" about her drawings?

3. What further evidence do we have that Dr. Forester is upset?

Challenge: Why does this suggest she is upset?

4. What information have we been given about Amy that tell us why she "tingles" when she hears the word *mystery*?

NAME: _____ DATE: _____

SCIENTIST QUESTIONS:

1. How was matter defined in earlier chapters?

_____

_____

SUPPORT:

The answer is in the second half of Chapter 1.

2. How has Tess added to the definition of matter?

_____

_____

3. What are different kinds of atoms called?

_____

_____

4. How do scientists arrange the elements?

_____

_____

ACTIVITY PAGE 4.2

NAME: _____ DATE: _____

PART 1.

Working in your small groups, find each of the elements mentioned by Tess on page 26 of the Reader in the periodic table. Note down their chemical symbols and circle them in the periodic table below.

Periodic Table of the Elements

1	2								
7 **Li** lithium 3	9 **Be** beryllium 4								
23 **Na** sodium 11	24 **Mg** magnesium 12								
39 **K** potassium 19	40 **Ca** calcium 20	45 **Sc** scandium 21	48 **Ti** titanium 22	51 **V** vanadium 23	52 **Cr** chromium 24	55 **Mn** manganese 25	56 **Fe** iron 26	59 **Co** cobalt 27	59 **Ni** nickel 28
85 **Rb** rubidium 37	88 **Sr** strontium 38	89 **Y** yttrium 39	91 **Zr** zirconium 40	93 **Nb** niobium 41	96 **Mo** molybdenum 42	[98] **Tc** technetium 43	101 **Ru** ruthenium 44	103 **Rh** rhodium 45	106 **Pd** palladium 46
133 **Cs** caesium 55	137 **Ba** barium 56	139 **La*** lanthanum 57	178 **Hf** hafnium 72	181 **Ta** tantalum 73	184 **W** tungsten 74	186 **Re** rhenium 75	190 **Os** osmium 76	192 **Ir** iridium 77	195 **Pt** platinum 78
[223] **Fr** francium 87	[226] **Ra** radium 88	[227] **Ac*** actinium 89	[261] **Rf** rutherfordium 104	[262] **Db** dubnium 105	[266] **Sg** seaborgium 106	[264] **Bh** bohrium 107	[277] **Hs** hassium 108	[268] **Mt** meitnerium 109	[271] **Ds** darmstadtium 110

1
H
hydrogen
1

Key

relative atomic mass
atomic symbol
name
atomic (proton) number

** The lanthanoids (atomic numbers 58–71) and the actinoids (atomic numbers 90–103) have been omitted.*

The relative atomic masses of copper and chlorine have not been rounded to the nearest whole number.

ACTIVITY PAGE 4.2

NAME: _____ DATE: _____

							0
							4 **He** helium 2
		3	4	5	6	7	
		11 **B** boron 5	12 **C** carbon 6	14 **N** nitrogen 7	16 **O** oxygen 8	19 **F** fluorine 9	20 **Ne** neon 10
		27 **Al** aluminium 13	28 **Si** silicon 14	31 **P** phosphorus 15	32 **S** sulfur 16	35.5 **Cl** chlorine 17	40 **Ar** argon 18
63.5 **Cu** copper 29	65 **Zn** zinc 30	70 **Ga** gallium 31	73 **Ge** germanium 32	75 **As** arsenic 33	79 **Se** selenium 34	80 **Br** bromine 35	84 **Kr** krypton 36
108 **Ag** silver 47	112 **Cd** cadmium 48	115 **In** indium 49	119 **Sn** tin 50	122 **Sb** antimony 51	128 **Te** tellurium 52	127 **I** iodine 53	131 **Xe** xenon 54
197 **Au** gold 79	201 **Hg** mercury 80	204 **Tl** thallium 81	207 **Pb** lead 82	209 **Bi** bismuth 83	[209] **Po** polonium 84	[210] **At** astatine 85	[222] **Rn** radon 86
[272] **Rg** roentgenium 111	Elements with atomic numbers 112–116 have been reported but not fully authenticated						

ACTIVITY PAGE 4.2

NAME: _____ DATE: _____

PART 2.

Now read the text again carefully and list the differences between metals and nonmetals that Tess describes. The first example has been completed for you.

METALS	NONMETALS
Resonant: *make a ringing sound*	***Nonresonant:*** *don't make a ringing sound*

NAME: _____ DATE: _____

PART 3.

Now read the descriptions of the elements below. Find the elements in the periodic table, and label whether you think they are metals or nonmetals from the descriptions in the text.

1. My little brother stole my mom's gold wedding ring while she was washing up. Next thing I knew, he was pounding it flat with a rock in the back garden! There was mud all over it, so it wasn't as shiny as normal. I managed to rescue it and take it back to her. It made a sad clinking sound when I placed it on the counter.

   Name of the element: _____

   Characteristics described: _____

   Metal or nonmetal? _____

2. Carbon is one of the most amazing elements: it is the source of all life on our planet. But it doesn't look like much. It's dark and dull, and crumbles when you press it too hard. You can't make it into shapes or wires.

   Name of the element: _____

   Characteristics described: _____

   Metal or nonmetal? _____

ACTIVITY PAGE 4.2

NAME: _____ DATE: _____

3. When you peel back the plastic, you can see the shiny brown wire underneath, glistening in the light. It's amazing that something so thin makes all of our lights, and the toaster, and other things in the house work. Apparently the wire is made of copper, which was discovered 11,000 years ago. I don't know why we don't make more jewelry out of it–it's so pretty.

   Name of the element: _____

   Characteristics described: _____

   Metal or nonmetal? _____

4. Sulfur is not my favorite element. When it reacts it releases a horrible rotten-egg smell. As a solid, it's yellow and brittle. It doesn't make a nice sound when you hit it (in fact, it crumbles).

   Name of the element: _____

   Characteristics described: _____

   Metal or nonmetal? _____

CHALLENGE:

Can you come up with your own examples from elements you recognize in the periodic table?

_____

_____

_____

NAME:_____ DATE:_____

COMBINE SENTENCES

Combine the following sentences:

1. The dinosaur roared. It started running toward us.

_____

_____

2. Amy was careful when lifting the egg from the dig. The egg was many thousands of years old.

_____

_____

_____

3. Amy might have looked bored. She was really excited.

_____

_____

ACTIVITY 4.3

NAME: _____ DATE: _____

Reduce the following sentences:

1. The fox, which was quick and colored brown, jumped over the dog, which was lazy and didn't bother to get up.

_____

_____

_____

2. The pizza, cold and clammy to the touch, made Felix grimace when he ate it.

_____

_____

_____

ACTIVITY 4.3

NAME: _____ DATE: _____

Challenge:

Can you come up with your own examples?

_____

_____

_____

_____

ACTIVITY 4.4

NAME: _____ DATE: _____

SUMMARIZING EVENTS

The Sheriff has heard some tales of strange happenings at the dig site and asked one of his junior policemen to compile a report to see if there's anything worth investigating.

Your job is to summarize the events that have befallen the campers so far, making particular note of who did what, and went where.

Your teacher will model taking notes to summarize the events for your police report from the first day for the campers. As she works, write notes with her in the space below.

When	Who	Where
Day 1–on the way to camp		
Day 1–on the way to camp		
Day 1–at the camp		
Day 1–at the camp		
Day 1–at the dig site		

ACTIVITY 4.4

NAME: _____ DATE: _____

Description	Incidents?

ACTIVITY 4.4

NAME: _____ DATE: _____

EVENTS

Now complete the table for Chapter 2 in your pairs. One of you will complete the first half of the table, and the other the second half of the table.

Partner I

When	Who	Where
Chapter 2— at the dig site		

ACTIVITY 4.4

NAME: _____ DATE: _____

Description	Incidents?

ACTIVITY 4.4

NAME: _____ DATE: _____

Partner 2

When	Who	Where

NAME: _____ DATE: _____

Description	Incidents?

Challenge

See how well you remember the events. Ask your partner to name a character, and see if you can recount all of his or her movements without looking at your table.

ACTIVITY 5.1

NAME: _____ DATE: _____

POLICE REPORT

In the space below, write a first draft of the police report to the sheriff.

Remember to:

- Concisely summarize the events.
- Make sure the sheriff can easily find the most important information.
- Be objective and state only facts.

NAME: _____ DATE: _____

Now that you have shared and discussed your work, write below how you would revise your police report on the basis of feedback you have received.

I would revise my police report by:

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

ACTIVITY 5.2

NAME:_____ DATE:_____

Article 1

What is the Investigation Process?

-The Metropolitan Police (the police force of London).

The information below briefly outlines the many stages of a police investigation.

1. **Initial investigation–**this will involve a review of witnesses, scenes, and all other available evidence.
2. **Investigative assessment–**after the initial investigation a decision will then be made whether to transfer the crime to an investigating officer for further investigation or not. This assessment will take into account the following:
   - Seriousness of the offense
   - Likelihood of solvability (e.g., availability of evidence)
   - Level of resources required proportionate to the seriousness of the offense

   There are two possible outcomes at this point.

   a) **Investigation will be closed**

   b) **Crime transferred for further investigation**

3. **Further investigation–**if the crime is transferred for further investigation this will include:
   - Taking statements from the victim and any witnesses
   - Arresting and detaining any identified suspects and formally interviewing them at a police station

   At the end of the investigation there are three possible outcomes for the suspect(s).

   a) **Charged–**the suspect is told that they will be sent to court and what law they are alleged to have broken.

   b) **Cautioned–**an official warning is given in some circumstances.

   c) **No further action–**if there is insufficient evidence to charge or caution a suspect, no further action will be taken.

NAME:_____ DATE:_____

Question:

Are there any arguments from this article you would like to use?

_____

_____

_____

Article 2

Preventing crime better than catching offenders

- Daily Telegraph 29 April 2013

The chief inspector for England and Wales suggested police forces would get "more bang for their buck" if they focus on prevention rather than cure . . .

. . . Mr Winsor, said the "primary purpose" of police is crime prevention.

"Sir Robert Peel who founded the modern police service in 1829, said the primary test of police efficiency is the absence of crime and disorder," he said.

"If we can prevent offences taking place we prevent there being any victims, which is absolutely critical, and also we save all of those costs . . . ."

Question:

Are there any arguments from this article you would like to use?

_____

_____

_____

ACTIVITY 5.3

NAME:_____ DATE:_____

Now that you have read the resources, prepare a statement below making your case to your partner. It can be just a few sentences. Remember you are trying to persuade your partner that you are right.

Remember a good opening statement:

- is clear.
- makes your argument.
- is "punchy" and compelling. You can use stories, for example, to make your argument.

Cite evidence from the Reader or one of the two articles to support your argument.

I think there should/should not be an investigation because

NAME: _____ DATE: _____

DEBATE ON THE SHERIFF

If you are playing the Sheriff, use the rubric below to judge the two police officers. Fill it in as they debate.

	Police Officer 1 (name: _____) Arguing for an investigation	**Police Officer 2** (name: _____) Arguing against an investigation
Was the person speaking clearly and maintaining eye contact?	**Y / N**	**Y / N**
Did they use evidence from the text in their argument? How many pieces?	**Y / N** Number: _____	**Y / N** Number: _____
Did they use evidence from the other articles in the other resources?	**Y / N**	**Y / N**
Did they use other techniques—stories for example—that made their argument more compelling?	**Y / N** Please give details.	**Y / N** Please give details.

ACTIVITY 6.1

NAME:_____ DATE:_____

As you read Chapter 4 in your pairs, complete the questions below. One of you should complete the questions for Julian and the other for Kristal. You will then use the answers to these questions to continue to develop your character maps from Lesson 3 (Activity Page 3.3).

JULIAN

How does Julian feel when he is told his discovery isn't gold? Quote from the text.

_____

Why does Julian feel this way? Can you point to clues about Julian's personality from other chapters to help you answer?

_____

_____

Challenge:

Why might Julian not wish to look for small fossils anymore?

_____

_____

_____

NAME:_____ DATE:_____

KRISTAL

Why did Kristal's eyes go "wide with surprise"?

_____

_____

Why is Kristal worried about people seeing her drawings?

_____

_____

What do you think Kristal's reluctance to show her drawings tells us about her character?

_____

_____

Language Challenge

Now answer the following questions in your pair.

The text says Amy's mind keeps "wandering." Wander is another word for walk. What kind of literary device is it to say that Amy's mind is wandering?

_____

What is the link between the literal and the metaphorical definition of something "wandering"?

_____

_____

ACTIVITY PAGE 6.2

NAME: _____ DATE: _____

In your pairs, read below the paragraphs from the Reader and answer the questions about the text.

1. He cleared his throat and suddenly turned to Tess. "I was wondering, Tess, just what is the difference between gold and fool's gold?"

   Amy thought Felix just asked the question to turn her attention away from him.

   Tess didn't notice, though, and was happy to answer it. "Remember that atoms are the smallest particles of matter. The thing is, you don't find many atoms all by themselves in nature. Atoms typically join together, or bond as chemists say, into groups of two or more to form molecules. Some molecules are made up of atoms of just a single element. A lump of gold, for example, would be made up of many gold atoms bonded together."

   How are atoms usually found in nature?

   _____

   _____

   _____

ACTIVITY PAGE 6.2

NAME: _____ DATE: _____

2. "Most molecules, though, are combinations of two or more different elements. A molecule of iron pyrite, for example, has two atoms of the element sulfur bonded to an atom of the element iron. Molecules that contain atoms of two or more different elements are called compounds. Water is another example of a compound. A water molecule is made up of two atoms of the element hydrogen and one atom of the element oxygen."

   Are molecules usually made up of one element or more than one? What are molecules made up of more than one element called?

ACTIVITY PAGE 6.2

NAME: _____ DATE: _____

3. "Is that why people sometimes call water 'H-2-O'?" Daria asked.

   "Precisely," Tess replied. "There are millions of molecules that are compounds and you can find them everywhere and in everything. This sandstone rock we're scratching away is made of molecules that are compounds. So are these dinosaur fossils, and the tools we're using. Each one of you is a walking, talking collection of different compounds that make up your bones, muscles, nerves, and everything else in your bodies."

   Why is Daria "precisely" right?

   _____

   _____

4. Dr. Forester suddenly spoke up. "Okay, here's a riddle: why are all compounds molecules, but all molecules are not compounds?"

   "Because some molecules are made up of atoms of only one element!" Matt exclaimed triumphantly.

   "Exactly right," Dr. Forester said.

   Why is Matt "exactly right"?

   _____

   _____

   _____

ACTIVITY PAGE 6.3

NAME: _____ DATE: _____

As your teacher summarizes the first paragraph in Activity Page 6.2, copy his or her summary below.

Now work in your pairs to summarize paragraphs 2 and 3 below.

Remember to think about:

- Whether the information is chemical content.
- Whether you really need the information to understand the content.
- **Hint:** Examples might be helpful, but it is not necessary when summarizing to include them all.

NAME: _____ DATE: _____

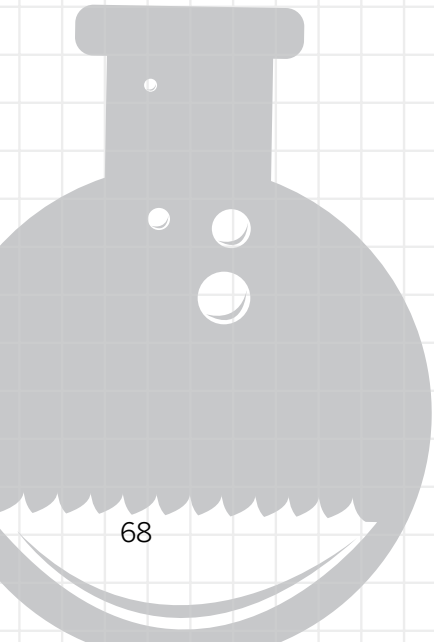
INTEGRATE INFORMATION

Use the information you summarized from the text and the following clues to identify the following molecules.

CLUES

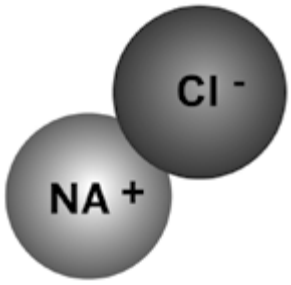
1. Copper is an element found bonded to other copper atoms in a lattice.
2. Salt is a very common and simple compound made of one atom of sodium bonded to one atom of chlorine.
3. Glucose, the sugar in our bodies, is a complex molecule. It is made up of carbon, hydrogen, and oxygen.
4. Do you know why water is called H_2O?

You may also wish to use your periodic table, found on Activity Page 4.2.



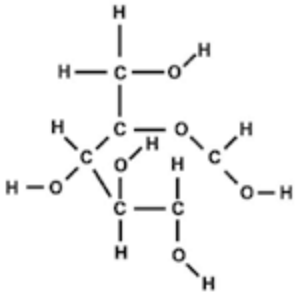
NAME: _____ DATE: _____

COMPOUNDS



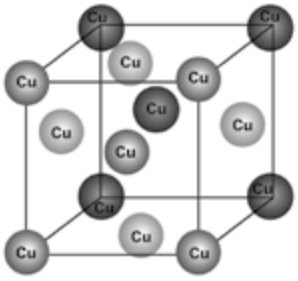
This molecule is _____

It is a(n)_____



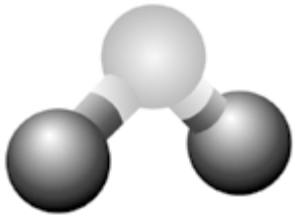
This molecule is _____

It is a(n)_____



This molecule is _____

It is a(n)_____



This molecule is _____

It is a(n)_____

ACTIVITY 6.5

NAME:_____ DATE:_____

COMMAS

With the sentences below, circle the subject of the sentence and then insert a comma after the introductory element.

1. To find the clues Amy had to get up very early in the morning.

2. Sensing something was wrong Matt decided to call his sister.

3. With a gulp and a glance at Felix Julian approached the snake.

ACTIVITY PAGE 7.1

NAME: _____ DATE: _____

Answer the questions below as you read the first half of Chapter 5.

1. What is a mixture?

2. Tess says that however much you stir a mixture, the physical properties do not change. Name examples of physical properties that do not change. (Hint: Look back at the second half of Chapter 1 in the Reader.)

3. Imagine a container with sugar dissolved in water. Can you use the information you learned about evaporation to explain how sugar crystals might be left behind if the container were left outside on a hot day? (Hint: Sugar does not change state until it is much hotter than a hot day would make it.)

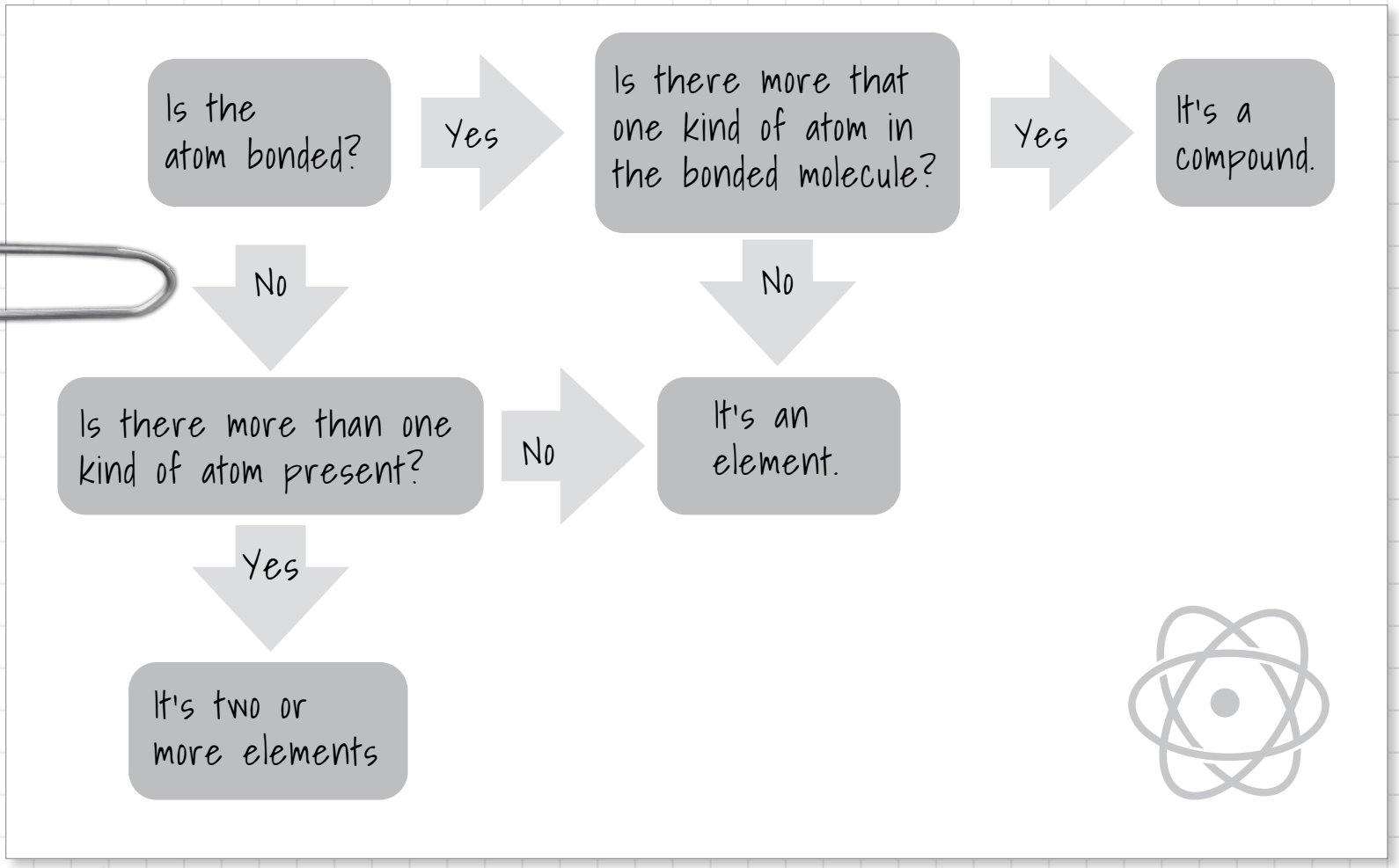
NAME: _____ DATE: _____

"TESS'S RULES"

Scientists have to be very precise about their terms and concepts. I can't say something is a solution when really it's a compound. All sorts of terrible things might happen! For example, for medicines to be safe and effective we need to know exactly what kinds of elements, compounds, mixtures, and solutions are being used.

Below are my rules for deciding if something is an element or a compound. I devised my rules by asking myself the following questions:

- Can people use this rule to answer the question, "Is something an element or a compound?"
- Is it possible to decide the answer to the question I ask in each case?
- Is the chart organized in a way that is easy to understand and use?



ACTIVITY PAGE 7.2

NAME: _____ DATE: _____

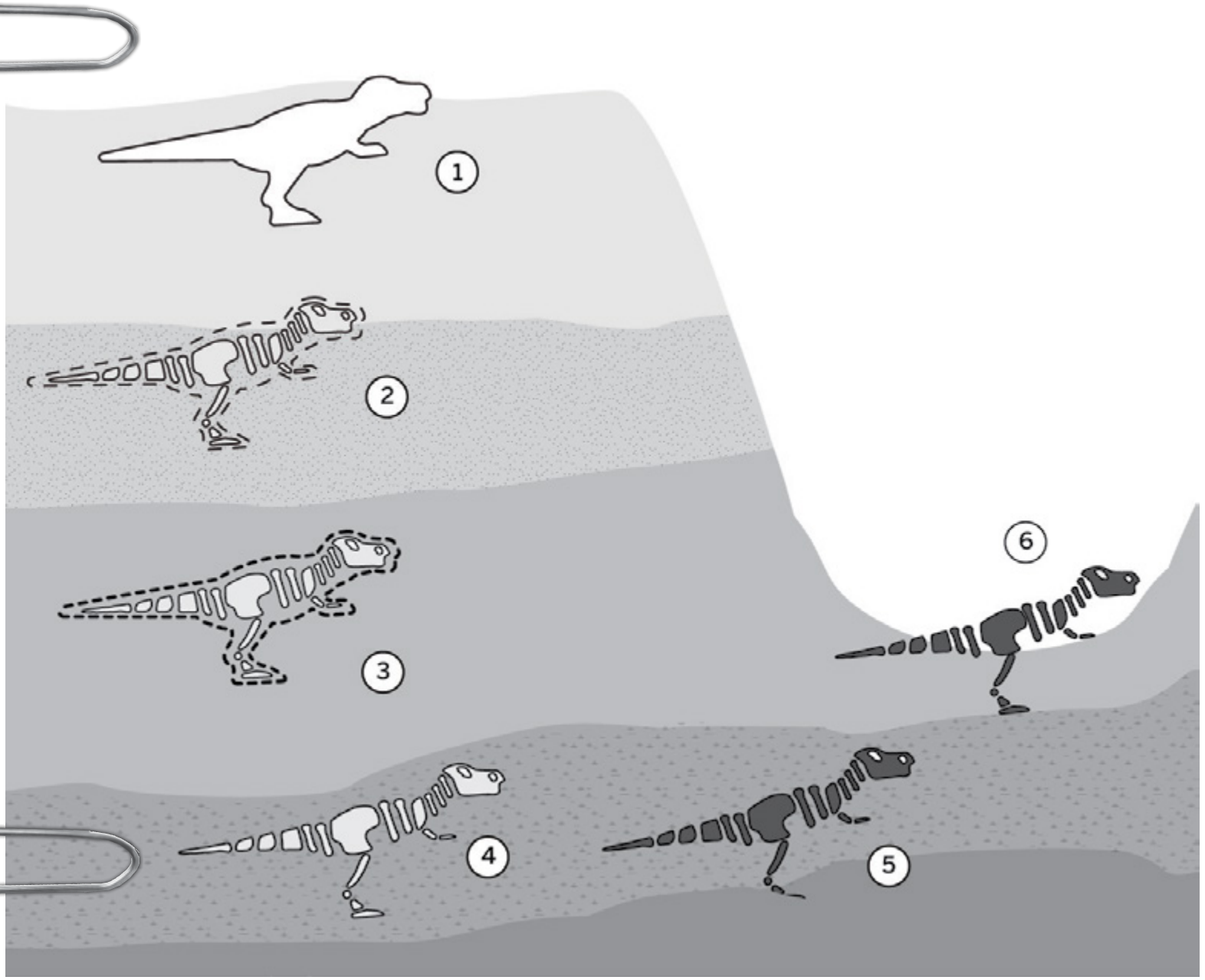
In the space below, create your own "Tess's Rules" for distinguishing between a mixture, a solution, and a compound.

ACTIVITY PAGE 7.3

NAME: _____ DATE: _____

Look at the diagram below. Place quotes from the Reader text on the next page under the relevant number ("as the bones slowly decay . . .") to explain in more detail what is occurring. Examples from the text for an earlier section have been completed for you.

How Fossils are Formed



ACTIVITY PAGE 7.3

NAME: _____ DATE: _____

1. The animal dies.

2. The remains of the body start to rot and get covered with mud.

   "His body was covered beneath a thick layer of muddy sand."

3. Over time, layers of sediments cover the bones.

   "It was preserved for a long time, sealed beneath tons of sand."

4. The sediments encasing the bones harden into rock.

5. As the bones slowly decay, minerals filter down into space and replace the chemicals in the bones.

6. Layers of rock get worn away by wind and rain (erosion), and a fossil is discovered!

ACTIVITY PAGE 7.3

NAME: _____ DATE: _____

Now fill in the additional information from the Reader you have found in your "treasure hunt."

LESSON AND ACTIVITY PAGE	WHAT YOU LEARNED	HOW IT HELPS YOU UNDERSTAND FOSSIL CREATION
1.2, 3.2	*Matter can be in different states: liquid, solid, and gas.*	*When water evaporates from liquid to gas, it leaves behind compounds that become the Achy Breaky fossil.*

ACTIVITY PAGE 7.4

NAME: _____ DATE: _____

Use the rubric below as the other small group presents on fossil creation.

	GROUP
Was the person speaking clearly and maintaining eye contact?	Y / N
Did every member of the group get a chance to speak?	Y / N
Did they use evidence from the diagram and Chapter 5 in their presentation? How many pieces?	Y / N Number: _____
Did they use evidence from other chapters in their presentation? How many pieces?	Y / N Number: _____
Did they use other techniques—stories for example—that made their argument more compelling?	Y / N Please give details:

ACTIVITY 8.1

NAME: _____ DATE: _____

Hi, everyone. Your favorite detective is back (that's me, Inspector Ellis, if you were wondering) and here to help you solve the case. It's a pleasure to help when you have a devoted fan like Amy.

It seems pretty clear we have a case on our hands. So we are going to practice making deductions. Don't worry if you're slower than I am—I am brilliant (as I mentioned before). Plus, I've practiced. A lot. You don't become one of the best detectives in the world (probably the best) without investigating a lot of cases.

Amy, who is a brilliant detective in training, has decided that the thief must be "one of us." A dramatic accusation! Our task is to decide if her deductions are correct.

First, let's review Amy's actions in the text. Fill in the table below, starting to read from "Amy was trying to think like Inspector Ellis" (smart girl!) up to "the thief is one of us!" I've done the first example for you.

What Amy did	What Amy saw or said/thought
Added a possibility in her notebook	*Yesterday the soil would have been smoothed by the rain. So if fossil thieves had parked and walked to the camp, there should be clear tire tracks and boot prints.*
Slipped out of camp	
Returns to camp and talks to Matt	

ACTIVITY 8.1

NAME: _____ DATE: _____

Now answer the questions to see if you have been paying attention.

1. What was Amy looking for and what did she find?

2. Amy says "no clue is a clue in itself." What does she mean?

3. Do you think the evidence supports the theory that there were fossil thieves arriving in an SUV or pickup truck?

4. Do you think Amy's deduction was correct? Why?

ACTIVITY 8.2

NAME:_____ DATE:_____

OPINION WRITING ON CHARACTER

Answer the question below.

- If you were creating maps for Julian and Kristal, answer for Julian.
- If you were creating maps for Felix and the squirrels, answer for Felix.
- If you were creating maps for Darla and the SUV, answer for Darla.

Look at the information you marked on your character maps that represented Amy's opinion rather than fact. Using that information, answer the following question:

What assumptions has Amy made about your character's behavior?

Do you think those assumptions are valid?

ACTIVITY 8.2

NAME: _____ DATE: _____

ACTIVITY 9.1

NAME:_____ DATE:_____

Use the questions and rubric below to guide you as you think about your presentation.

As You Prepare Your Presentation

Review your character maps, and use the information to structure your presentation using the guidance below.

1. You should begin by introducing your character. Who are they?
2. What important objective information do we know about the character?
3. Does that information point to them being a suspect or not? Or is it impossible to know?
4. What subjective information would you add about the character? Does that change your suspicions?
5. What further evidence would you like the sheriff's permission to look for? How would you like to collect that evidence? For example, you could look for clues, or interview the characters, or check their alibis.

You should also read the rubric in Activity Page 9.2 that students will use as they listen to the presentations. Keep the rubric criteria in mind as you consider what you will say.

NAME: _____ DATE: _____

In the space below, write down notes to help your presentation.

ACTIVITY 9.2

NAME: _____ DATE: _____

PRESENTATION TO SHERIFF

Use the rubric below to judge the reports on the character.
Fill it in as each character is presented.

Question	Characters being presented: Name of student:
Was the person speaking clearly and maintaining eye contact?	Y / N
Did they introduce the character clearly, using information from the text?	Y / N Details:
Did they identify objective information about the character?	Y / N Details:
Did they use that evidence to explain whether the character was a likely suspect?	Y / N Details:

ACTIVITY 9.2

NAME: _____ DATE: _____

Characters being presented: Name of student:	Characters being presented: Name of student:
Y / N	Y / N
Y / N Details:	Y / N Details:
Y / N Details:	Y / N Details:
Y / N Details:	Y / N Details:

ACTIVITY 9.2

NAME: _____ DATE: _____

Did they identify subjective information about the character?	**Y / N** Details:
Was it clear when evidence was subjective and when it was objective?	**Y / N** Details:
Was it clear what the presenter would like to find out next about the character?	**Y / N** Details:
Did this link to their evidence?	**Y / N** Details:

ACTIVITY 9.2

NAME: _____ DATE: _____

Y / N Details:	**Y / N** Details:
Y / N Details:	**Y / N** Details:
Y / N Details:	**Y / N** Details:
Y / N Details:	**Y / N** Details:

ACTIVITY PAGE 9.3

NAME: _____ DATE: _____

Use evidence from the text to answer the questions below.

1. Below is a list of the stages of removing fossil bones. Number the stages in the correct order (so 1 would be the step described first in the text). Circle any steps in which a chemical change is happening.

   _____ Soaking strips of burlap in the plaster.

   _____ Applying more strips on the bottom to create an "egg."

   _____ Mixing plaster of paris with water in a bucket.

   _____ Covering the fossil with the strips of burlap.

   _____ Breaking the plaster with a chisel and hammer.

   _____ Covering fossil with damp paper towels (make sure rock pillar is seen).

2. How does Tess explain the difference between a physical change and a chemical change?

   _____

   _____

   _____

NAME: _____ DATE: _____

3. What happens in a chemical change?

4. If matter goes through a chemical change, are the physical properties likely to stay the same?

5. Why does the warm bucket suggest a chemical change has taken place?

ACTIVITY PAGE 9.4

NAME: _____ DATE: _____

TESS'S RULES

In the space below, create your own "Tess's Rules" for distinguishing between a chemical change and a physical change. Use the rules you created on Activity Page 7.2 to help you.

NAME: _____ DATE: _____

IDENTIFYING EVIDENCE

As you read Chapter 7, note below the chemical changes the campers identify. In each case write down the chemical change and what evidence the camper or Tess offers to demonstrate it's a chemical change. The first one has been completed for you.

CAMPER(S)	CHEMICAL CHANGE	EVIDENCE GIVEN BY CAMPER
Matt and Daria	*wood burning*	*giving off heat and light not reversible (can't turn ash into wood)*
Felix and Kristal		
Amy and Tess		
Kristal		

ACTIVITY PAGE 10.1

NAME: _____ DATE: _____

Do you think some of the campers identify better evidence than others? Who do you think made the best case, and who made the weakest? Why? Make sure you quote from the text in your answer.

NAME:_____ DATE:_____

LETTER TO THE SHERIFF

In the space on following page, write a letter to the sheriff explaining the plan to catch the thief. You are hoping he will agree it is a good plan. Remember, the sheriff doesn't know any chemistry, so you will have to explain the physical and chemical changes. If you need help, use the notes in your activity book and the earlier chapters in the Reader to help you. You may find the "Tess's rules" you have created helpful.

Before you write the letter you should consider:

1. The appropriate way to address the sheriff. How should you begin your letter?
2. What evidence you should be presenting to the sheriff to explain why this is a good plan to catch a thief. You should think about the use of objective evidence and subjective evidence when you created your evidence boards. Why is this objective evidence?
3. How you wish to conclude the letter. Remember, you want the sheriff to agree with this plan.

ACTIVITY 10.2

NAME: _____ DATE: _____

There is a graphic organizer on the next page to help you organize your letter.

Write your letter below:

Dear Sheriff,

ACTIVITY 10.2

NAME: _____ DATE: _____

ACTIVITY 10.2

NAME: _____ DATE: _____

Challenge:

Can you come up with other plans to catch the thief using chemical and physical changes? See if you can use the materials around the campsite (like ash, wood, and marshmallows) to come up with a new plan.

You may wish to use the graphic organizer below to help you with your letter.

	Part 1: Physical Change	Part 2: Chemical Change
Matter Amy Uses		
What will happen to the matter?		
Why is this a physical/ chemical change? (You may need to refer back to previous notes and chapters.)		
Why does this help catch the thief?		
Why is this objective evidence?		

NAME:_____ DATE:_____

COMMAS

Read the conversation below and **place commas** in the correct places.

"You're a bit grumpy today aren't you" said Matt.

"No I'm just bored" sighed Amy.

Realizing the solution Matt went to the bookshelf and grabbed a detective novel.

"Try this" Matt said.

"Thanks!" responded Amy. "You know me pretty well don't you?" she added.

"Yes I guess I do" said Matt grinning.

ACTIVITY 10.4

NAME: _____ DATE: _____

MORPHOLOGY

Write the correct word to complete each sentence.

1. "I waited outside the sheriff's office for about half an hour before he gave me _____ to enter."
   (admission, permission, remission, emission)

2. "The squirrel _____ a loud chirruping sound before running away."
   (admitted, emitted, transmitted, permitted)

3. "The man from the SUV _____ he was lost."
   (admitted, emitted, transmitted, permitted)

4. "She was successful in her first _____."
   (missile, mission, remittance, committal)

NAME:_____ DATE:_____

ACCUSATION TO THE SHERIFF

Use the questions below as you decide how to organize your evidence board.

Does the organization of your board:

1. Distinguish between evidence for the character and evidence against the character being the fossil thief?
2. Distinguish between strong or objective evidence and weak or subjective evidence?
3. Allow you to form links between different pieces of information (for example, with lines between pieces of information or color coding)?

Draw in the rectangle below how you plan to organize your board. You can check that it meets your aims before drawing on the board itself.

ACTIVITY 11.2

NAME: _____ DATE: _____

Use the table below to take notes in your group as you look at the evidence boards.

	Motive?
Julian	
Kristal	
Felix	
Daria	
Squirrels	
SUV	

ACTIVITY 11.2

NAME: _____ DATE: _____

Means?	Opportunity?

ACTIVITY 11.3

NAME: _____ DATE: _____

I believe the fossils were stolen by _____.

I believe this because they had the:

1. Motive

Evidence: _____

_____

_____

_____

Two examples from text: _____

_____

_____

_____

_____

2. Means

Evidence: _____

_____

_____

_____

NAME: _____ DATE: _____

3. **Opportunity**

Evidence: _____

_____

_____

_____

Challenge:

Does your "Opportunity" section explain the opportunity to steal the fossils on both occasions?

ACTIVITY 11.4

NAME: _____ DATE: _____

Question
Was the group speaking clearly and maintaining eye contact?
Did they clearly state whom they were accusing?
Did they identify a clear motive, using evidence from the text?
Did they explain how the suspect had the means to commit the crime, using evidence from the text?
Did they explain how the suspect had the opportunity to commit the crime, using evidence from the text?
Was it clear when evidence was subjective and when it was objective?
Do you think the evidence was convincing? Why or why not?

NAME:_____ DATE:_____

Name of suspect accused:
Students in small group:
Y / N
Y / N
Y / N Details:
Y / N Details:
Y / N Details:
Y / N Details:
Y / N Details:

ACTIVITY 12.1

NAME: _____ DATE: _____

Event: What happened?	When did it happen?
"I snuck in here later that night to see them for myself. I'd picked one up to look at it more closely when I thought I heard someone coming, and without thinking I shoved the fossil into my pocket and slipped out the back of the tent."	*at the end of Chapter 2 (the second night at camp)*
"I thought I'd just put the fossil back when no one was looking, and she'd just assume she misplaced it. But every time I tried to do that, either Tess or Dr. Forester was here in the lab."	

NAME: _____ DATE: _____

Why did it happen?	Were there any clues this was happening?
Julian "didn't want to wait" until the morning to see the fossils.	*"I want to look at them!" Julian said, jumping up from his chair and heading for the lab.* *Dr. Forester caught him by the shoulder. "If you don't mind, Julian, let's wait until morning. It's really time for everyone to head for bed."* *Julian shrugged and reluctantly said, "Okay."* *(quote from end of chapter 2)*

ACTIVITY 12.1

NAME: _____ DATE: _____

"Then we found more fossils and Dr. Forester started talking about how great it would be if she could get some of them to fit together. I thought since I had the missing piece that maybe I could use it to figure that out, and maybe it would turn out be an important new discovery."	
"Once I had the fossils, I couldn't make any sense of them. I couldn't even figure out a way to put them back in the lab without getting caught. So I put them in a sack and hid them under a bush."	
"So last night I brought the fossils back and put them there on the table. It seemed better than being caught with them red-handed or having to admit in front of everyone what I did. I didn't think much further than that."	

ACTIVITY 12.1

NAME: _____ DATE: _____

ACTIVITY 12.2

NAME: _____ DATE: _____

	Character *(circle the appropriate one)* **SUV** **squirrels** **Felix** **Daria**	**Character** *(circle the appropriate one)* **SUV** **squirrels** **Felix** **Daria**
What information do we learn about this character in Chapter 8?		

NAME:_____ DATE:_____

ACCUSATION TO THE SHERIFF

As you work with the teacher, fill in the table below.

	Character's wants	Character's behavior	Character's resolution
Daria	*She misses her mother.*		
Felix			
Squirrels			
SUV			

ACTIVITY 12.4

NAME: _____ DATE: _____

GRAMMAR

1. **Use the word in brackets** to complete the sentence, turning the word into the past perfect tense.

   They ate the snacks that Felix _____. (provides)

   Amy read the letter Inspector Ellis _____. (send)

   They talked about the case they _____. (solve)

   I edged away from the snake I _____. (spot)

   We carefully removed the egg we _____. (excavate)

2. **For two of the example sentences above,** can you list the order of the actions in the space below?

NAME: _____ DATE: _____

CHAPTER 13

Read Chapter 13 up to "That's absolutely amazing," **and answer** the questions below:

1. Tess says chemical changes are the "ultimate" recyclers. Why do you think she used the word *ultimate*?

   _____

   _____

2. Plants 300 million years ago had bodies built from compounds. What are compounds?

   _____

   _____

3. What element existed in all of those compounds?

   _____

4. Name the chemical changes that converted the plants into a plastic bottle.

   _____

   _____

5. Which of those chemical changes happened without humans and which required humans?

   _____

   _____

ACTIVITY PAGE 13.1

NAME: _____ DATE: _____

Now look at the diagrams on the following pages. These refer to the process of plants from 300 million years ago turning into plastic bottles.

In your pairs, identify the diagrams that explain how plants get turned over time into coal and oil, and then how coal and oil become plastics.

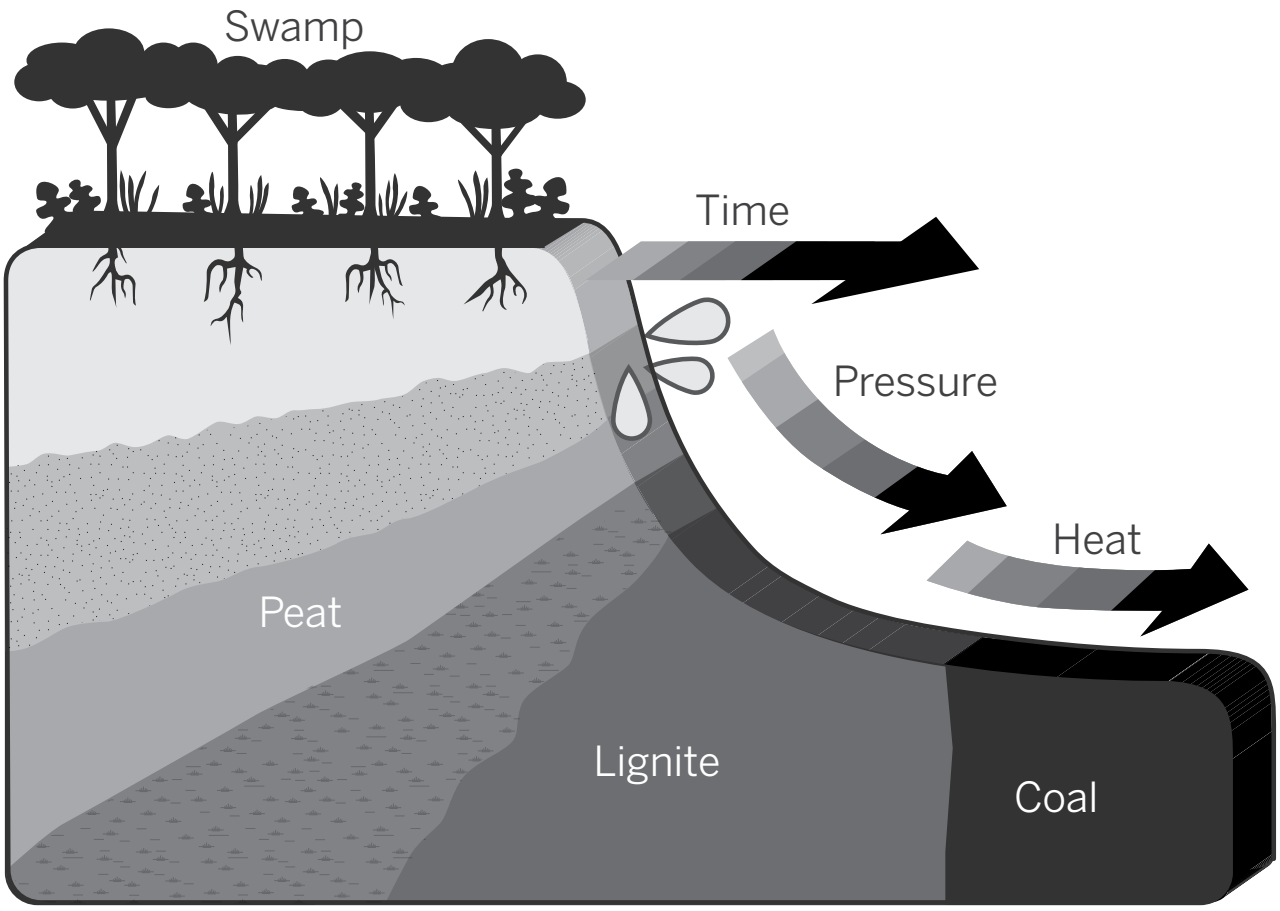
In the space below, replicate the diagrams in the correct order, and annotate them with information from the text to explain how a plant could be turned into a plastic bottle.

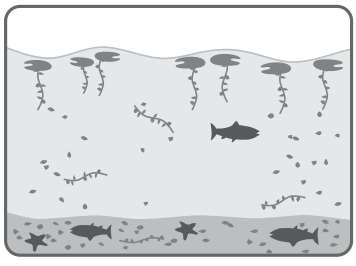
ACTIVITY PAGE 13.1

NAME: _____ DATE: _____

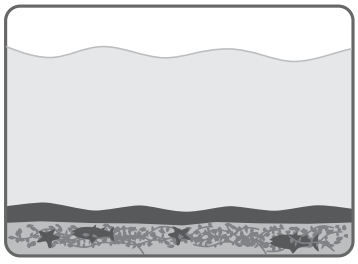
ACTIVITY PAGE 13.1

NAME: _____ DATE: _____

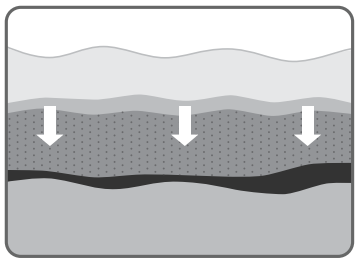




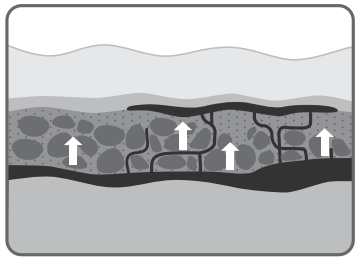
1. Marine plants and animals die and sink to the bottom of the seabed.



2. The plant and animal layer gets covered with mud.



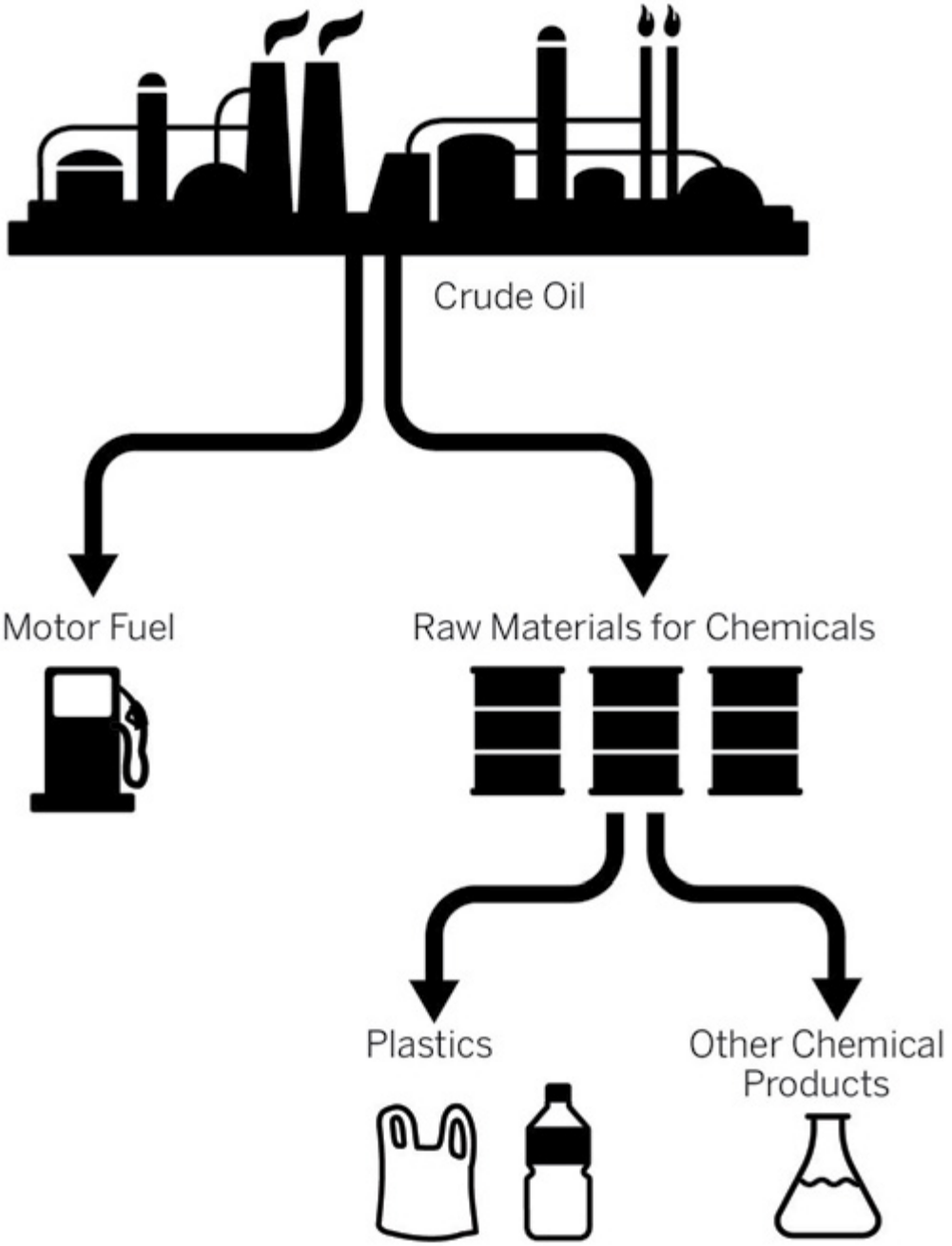
3. Over time, more and more sediment creates pressure and turns the dead plants and animals into oil.



4. Oil is pushed up through rocks and forms a reservoir or big pool.

NAME: _____ DATE: _____

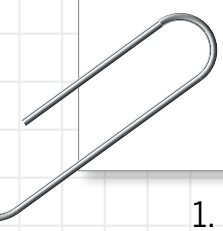
From Crude Oil to Plastics



ACTIVITY PAGE 13.2

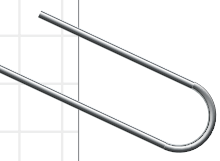
NAME: _____ DATE: _____

Continue reading Chapter 13 up to "'Thanks, Achy-Breaky,' he said, 'I needed that.'" Answer the question below each paragraph:



"In photosynthesis, the atoms making up molecules of water and carbon dioxide are recombined, using energy from sunlight, to produce molecules of sugar and oxygen gas. Plants release the oxygen into the air, and use the sugar molecules to grow and build their bodies, including the parts that animals and people eat for food."

1. Three sets of chemical changes are mentioned. Can you describe them?
   Hint: Two of them were described in the chemical changes game.



"'Excellent question, Felix.' Tess took a deep breath and let it out slowly. 'The cells of all living things produce carbon dioxide as a waste product. We get rid of it by exhaling.' Then she gestured toward the fossils that lay in the rock beside them. 'Whenever something dies, like good old Achy-Breaky, the compounds in its body are broken down and the atoms that formed them are recycled. Some chemical changes that are part of decomposition return carbon to the air as carbon dioxide.'"

2. Why did Tess take a deep breath and let it out slowly?

3. Tess describes two ways carbon dioxide enters the air. Exhaling is one. What is the other?

ACTIVITY PAGE 13.2

NAME: _____ DATE: _____

"'When this amazing dinosaur died, the compounds that made up his body were broken down by chemical changes. The atoms that were once part of those compounds moved on. Perhaps, thanks to chemical changes, some of Achy-Breaky's atoms are now part of compounds in the soil or the water or the air. Perhaps'—Tess paused and her voice fell to a whisper—'the air that you're breathing right now contains atoms that were once part of this dinosaur.'"

4. Tess said before this paragraph that it doesn't matter if we are breathing in the atoms of dead bodies. Why?

_____

_____

_____

Now look at the chemical formula descriptions below.

The chemical formula for plant sugar is $C_6H_{12}O_6$, where C stands for carbon, H stands for hydrogen, and O stands for oxygen. The numbers tell you how many atoms of each element are in the compound.

Carbon dioxide has the formula CO_2.

Water has the formula H_2O.

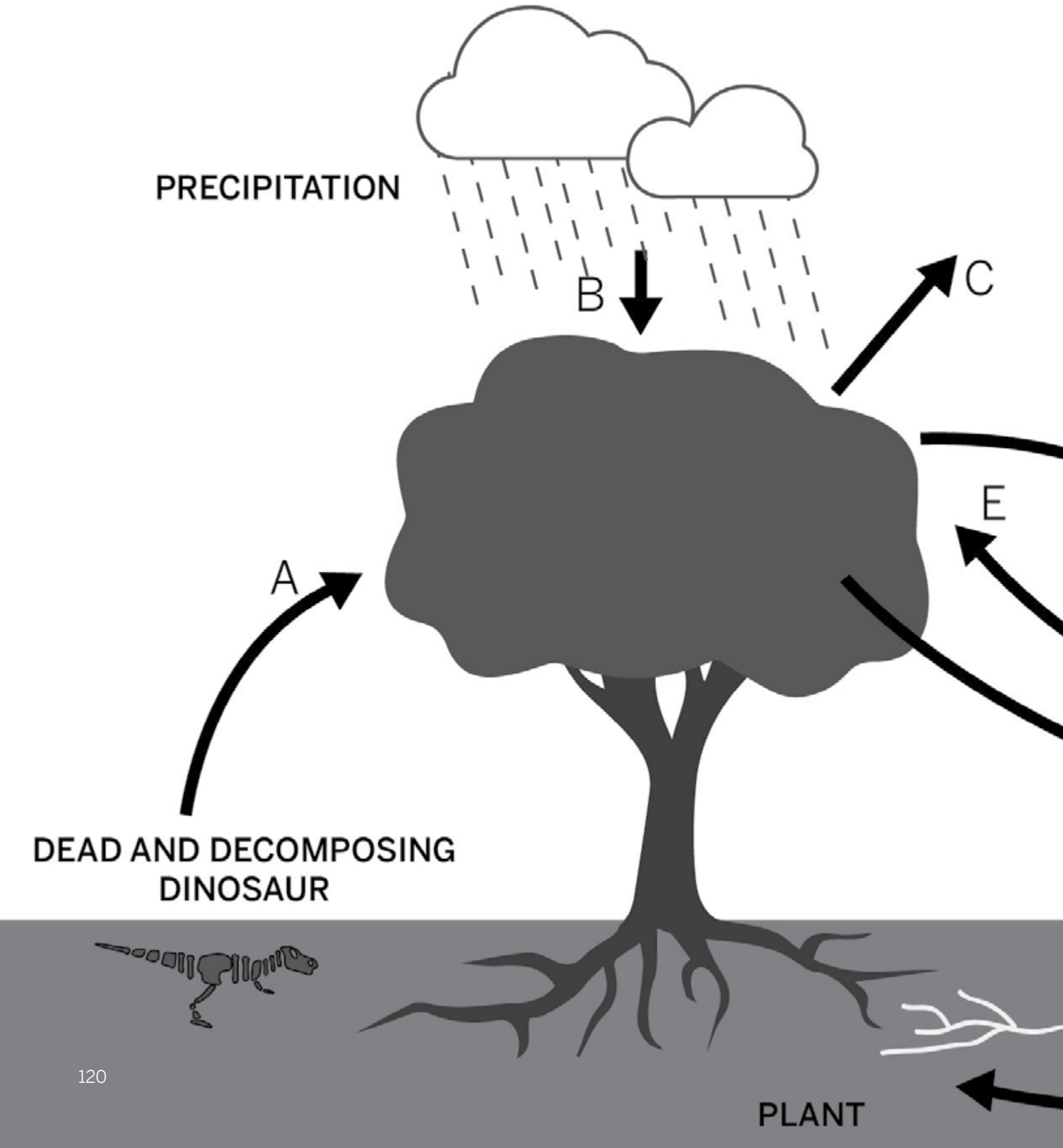
Oxygen has the formula O_2.

Using the chemical formulae and the diagram on the next page:

1. Annotate the diagram by describing how chemical changes occur through photosynthesis and beyond.
2. Draw the appropriate chemical formulae next to the appropriate parts of the diagram to explain how chemical matter is transformed through this process.

ACTIVITY PAGE 13.2

NAME: _____ DATE: _____



ACTIVITY PAGE 13.2

NAME: _____ DATE: _____

A.

B.

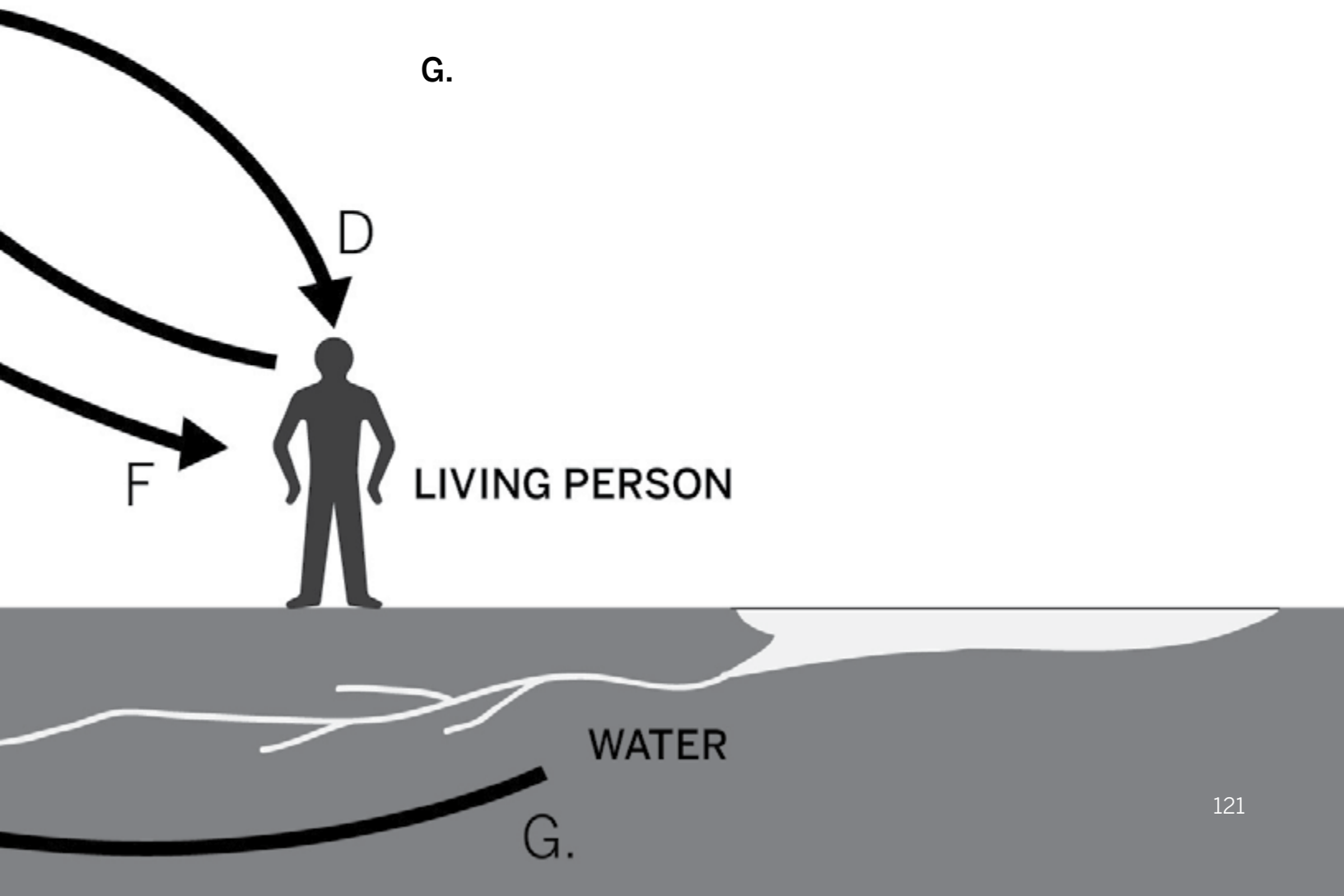
C.

D.

E.

F.

G.



ACTIVITY 13.3

NAME: _____ DATE: _____

GRAMMAR

I. **Combine the pairs** below using the future perfect tense. The first has been completed for you.

Felix will eat cake (before he eats dinner).

"Felix will have eaten cake before he eats dinner."

Amy will go for a walk (before she goes to sleep).

We will do the washing up (before going to bed).

I will become a detective (before you become a paleontologist).

NAME:_____ DATE:_____

2. **Use the present perfect tense** to create a sentence from the following descriptions:

visiting France every year since you were a child

_____

_____

growing five inches already this year

_____

_____

waiting for a bus for 30 minutes

_____

_____

ACTIVITY 13.4

NAME: _____ DATE: _____

RESOLUTIONS

As you read, complete the table below:

	Character's wants
Amy	
Dr. Forester	

ACTIVITY 13.4

NAME: _____ DATE: _____

Character's behavior	Character's resolution

ACTIVITY 13.5

NAME: _____ DATE: _____

Answer the question below.

Think about Amy or Dr. Forester. Do you think the Reader provided a satisfying resolution for her character? Explain your answer using evidence from the text.

_____

_____

_____

_____

NAME:_____ DATE:_____

ACTIVITY 14.1

NAME: _____ DATE: _____

Use the table below to create a first plan for your new detective story.

	Details
Setting	
Characters	
My character's "wants"	
How will my story begin?	
How will my story end?	
The plot (sequence of events)	(see diagram)
What scientific content might I use?	

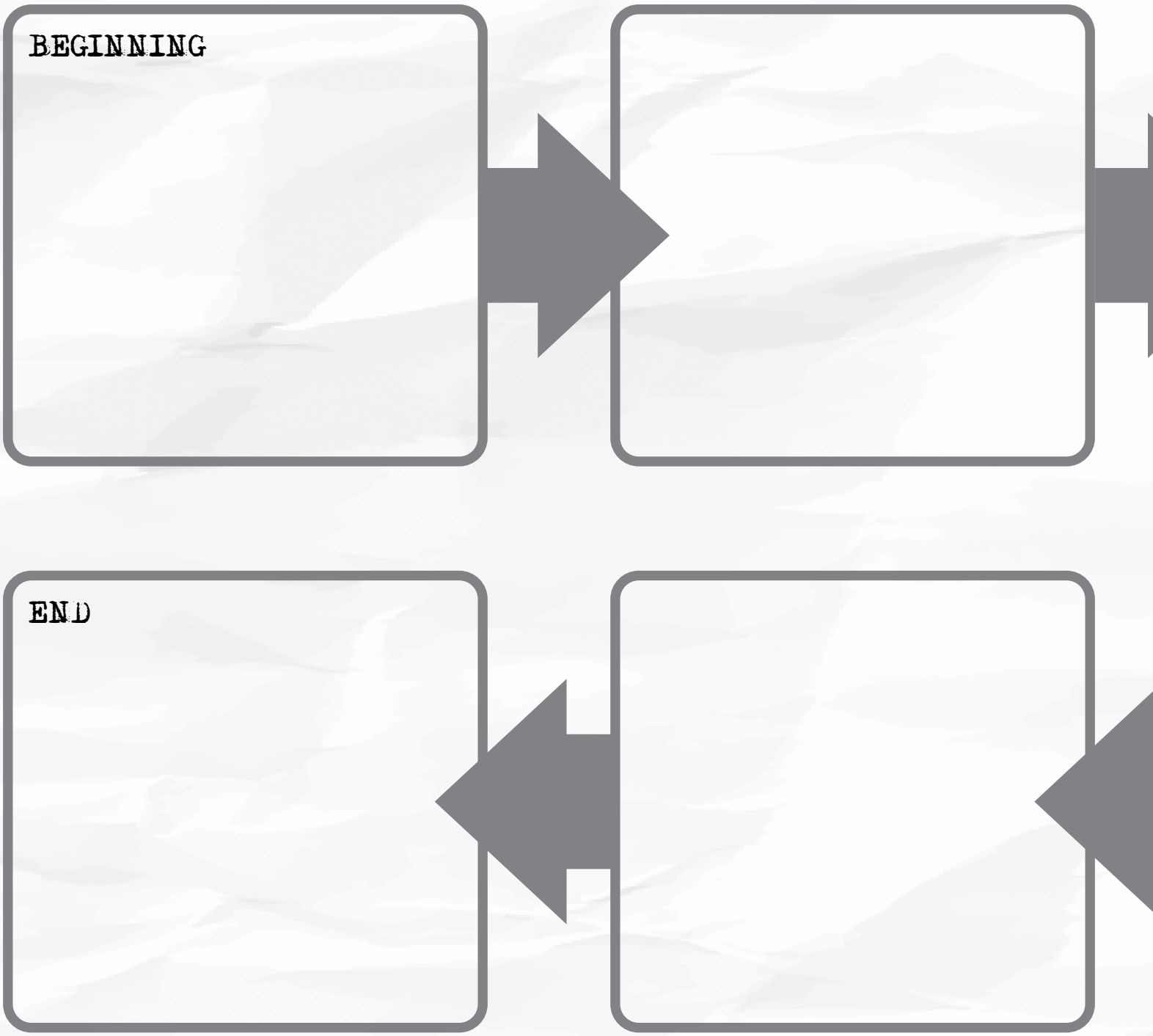
NAME:_____ DATE:_____

Description words I plan to use

ACTIVITY 14.1

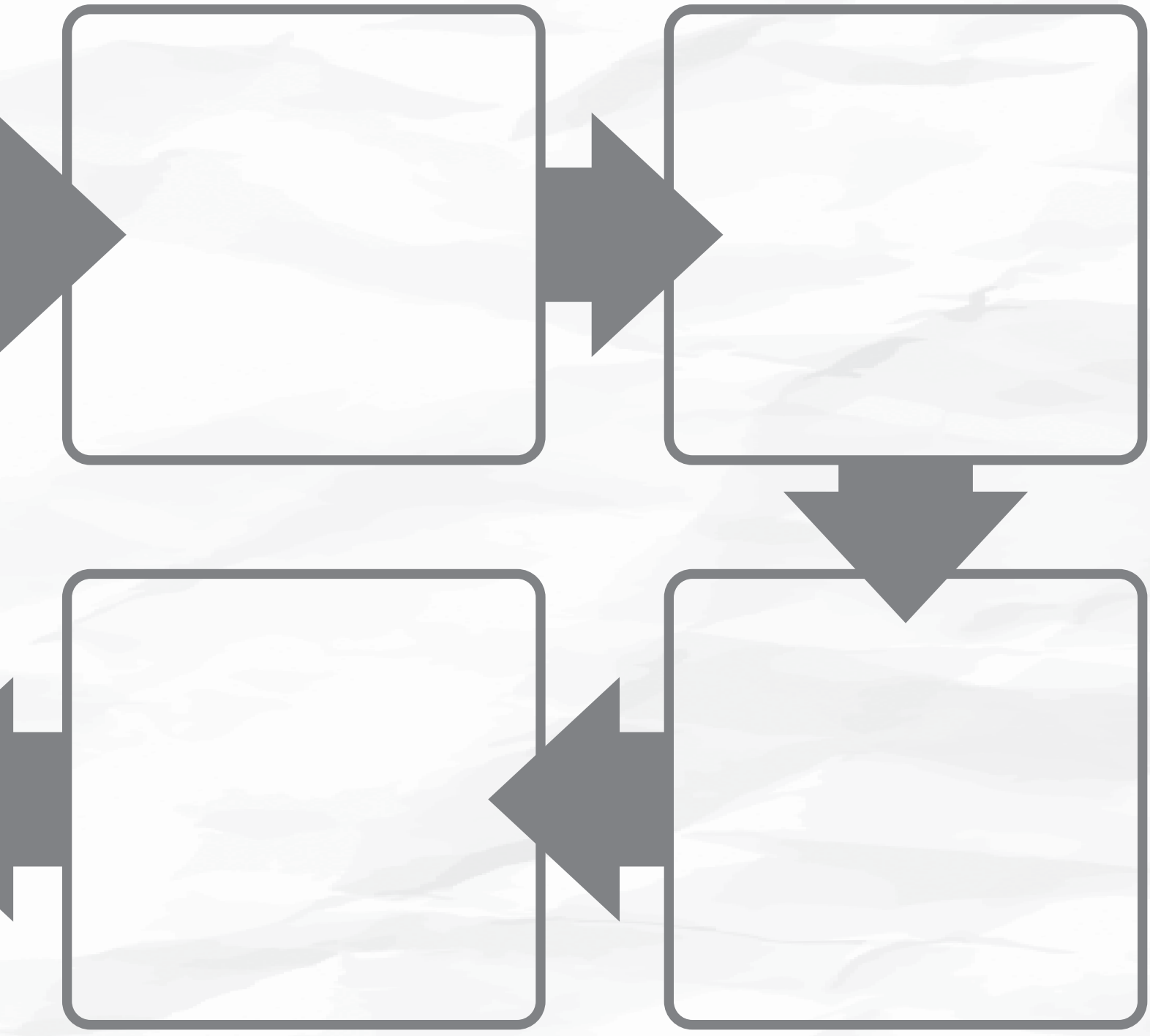
NAME: _____ DATE: _____

You may also wish to use the following diagram to help you think about plot sequence.



ACTIVITY 14.1

NAME: _____ DATE: _____



ACTIVITY 14.2

NAME:_____ DATE:_____

STORY

In the space below, start drafting the first chapter of your detective story.

ACTIVITY 14.2

NAME: _____ DATE: _____

ACTIVITY 14.2

NAME: _____ DATE: _____

ACTIVITY 14.2

NAME: _____ DATE: _____

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

Today you will read two pieces about chemical matter. After reading the excerpts, you will answer several questions based on the texts. Some of the questions have two parts. You should answer Part A of the question before you answer Part B.

The Ancient Art of Making Salt

1 Salt is a chemical compound known to chemists as sodium chloride. A molecule of sodium chloride contains one atom of the element sodium (chemical symbol Na) and one atom of the element chlorine (chemical symbol Cl) bonded together. If you look closely at ordinary table salt, the kind you find in saltshakers on restaurant tables, you'll see that this compound occurs as tiny, white, cube-shaped crystals.

2 Salt is surely one of the world's most common seasonings and has been for thousands of years. Since ancient times, people have cooked with salt, added it to breads and other baked goods, and sprinkled it directly on foods to improve their taste. Salt is so plentiful and inexpensive in the modern world that we hardly think twice when we grab a saltshaker and shake some of these tiny white crystals onto popcorn or corn on the cob.

3 But where does salt come from? In some parts of the world there are large deposits of salt deep underground, and salt is mined like other minerals such as silver or iron. Probably the oldest source of salt, however, is seawater. Seawater is a solution containing a number of dissolved substances, but salt (chemical symbol NaCl) makes up the greatest proportion of these dissolved substances. If you have ever gone swimming in the ocean and swallowed a little seawater, you know that it really does taste salty!

4 In ancient times, people who lived near the ocean obtained salt from seawater by letting the water evaporate and exploiting this physical change in the state of matter to separate out the salt. As the water in seawater evaporates, the salt

NAME: _____ DATE: _____

remains behind as tiny crystals. This traditional method of harvesting salt from the ocean continues today. The process begins when seawater is channeled into large, very shallow ponds with low walls around them so the water cannot run out or flow back into the ocean. Then the water is simply allowed to evaporate with the help of heat from the sun. Because the sun provides the heat to power the salt-making process, salt produced this way is sometimes called solar salt.

5 Depending on the temperature, the evaporation process may take many months or even years, ending only when all the water has changed state into water vapor, leaving behind flat beds covered with a thick layer of salt crystals. The salt crystals are raked into piles and put into bags or shoveled onto trucks that deliver the salt to factories where it is processed and packaged. Because solar salt production relies on evaporation, it is easy to understand why most salt ponds are in places that tend to be hot and dry, and have very little rain. Imagine how frustrating it would be to have a bed of solar salt almost dry enough to harvest, only to have a thunderstorm flood the pond with rainwater so that all the salt dissolves again!

6 Not all solar salt is produced from seawater, however. The Great Salt Lake in Utah is one of the saltiest bodies of water on the earth, much saltier than the ocean. It is salty because rivers flow into the lake, bringing water that contains dissolved salt, but no water flows out. As water evaporates from this enormous lake—the largest body of water between the Great Lakes and the Pacific Ocean—the salt becomes more and more concentrated. Depending on the time of year (and the amount of rainfall) the Great Salt Lake is typically three to five times saltier than the ocean. In fact, the Great Salt Lake is too salty for fish and most other types of living things that you would expect to find in a lake. About the only animals able to live in the Great Salt Lake are tiny brine shrimp, a favorite food of certain types of birds—and of fish kept in aquariums. If you've ever had fish as pets, you may have fed them dried brine shrimp harvested from the Great Salt Lake!

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

7 Commercial solar salt-making around the Great Salt Lake began in 1847, although Native Americans living in the region probably made use of salt deposits that formed along the lakeshore long before that. Scientists estimate that there are nearly 5 billion tons of salt in the Great Salt Lake. Every year roughly 2.5 million tons of solar salt are extracted from the lake's salty waters, having been produced in commercial evaporation ponds. Salt from the Great Salt Lake is also rich in the elements potassium, magnesium, and sulfur.

ut.water.usgs.gov/greatsaltlake/

wildlife.utah.gov/gsl/brineshrimp/what.php

historytogo.utah.gov/utah_chapters/the_land/greatsaltlake.html

www.saltworks.us/salt_info/si_HistoryOfSalt.asp

www.utah.com/stateparks/great_salt_lake_facts.htm

www.gslminerals.com/

www.cargill.com/corporate-responsibility/environmental-sustainability/innovations-case-studies/san-francisco-bay-salt/sustainable-salt-making/solar-ponds/index.jsp

content.time.com/time/magazine/article/0,9171,925341-2,00.html

www.maldonsalt.co.uk/About-Salt-Salt-an-amazing-history.html

www.saltworks.us/salt_info/si_HistoryOfSalt.asp

archaeology.about.com/od/foodsoftheancientpast/qt/Making-Salt.htm

www.mortonsalt.com/salt-facts/salt-production-and-processing

NAME: _____ DATE: _____

The Atomic Ice Cream Shop

1 Alice pushed open the heavy door of the ice cream shop and flopped down in a chair at one of the small metal tables. Her friend Trevor was right behind her, but he stopped for a moment to glance up at the big chalkboard that listed the day's ice cream flavors in several columns.

2 "Mmmm, they have chocolate peanut butter swirl today," he said, slipping into a chair across from Alice. "That's one of my absolute favorites."

3 "Oh, Trevor, I have so much homework to do," Alice lamented. "And I didn't really get what Mr. Matobi talked about in science today, all that stuff about atoms and elements and molecules and compounds. I can't keep those terms straight in my head."

4 "Well, maybe I can help." Trevor sat up straight and cleared his throat. "All matter is made up of small particles called atoms. There are more than a hundred different kinds of atoms and each kind is called an element. The elements are all listed on the periodic table of the elements that we have hanging on the wall in science class. Now atoms of various elements can combine—"

5 "Wait, wait, wait!" said Alice. "You're confusing me even more. Let's start at the beginning: what's the difference between an atom and an element?"

6 Trevor took a deep breath and said in a slow, even voice, "An element is a building block of matter that can't be simplified, while an atom is the smallest amount of an element you can have."

7 Alice looked cross-eyed at her friend. "I'm never going to get this, Trevor. You've got to make it simpler somehow!"

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

8 "Hmmm," Trevor said, glancing around the ice cream shop. His gaze fell on the chalkboard again, with all the many flavors of ice cream written in colored chalk. "I've got an idea. Let's say that the chalkboard up there is like the periodic table of the elements. Each ice cream flavor that's listed is like an element, a building block that we can use to create a fantastic dessert. Okay so far?"

9 Alice stared up at the board and nodded. "Got it. Each flavor of ice cream is an element."

10 "Now, the smallest portion of ice cream you can buy here is one scoop," Trevor continued. "So let's say that one scoop of ice cream is like an atom. An atom is the smallest amount of an element you can have that still has that element's properties."

11 "Okay, one scoop equals an atom," Alice repeated.

12 "Now, suppose I decided to get two scoops of chocolate peanut butter swirl. The girl behind the counter would put those two scoops in a waffle cone and kind of mash them together so they would stay put. Those two scoops are like two atoms of the same element—in this case, chocolate peanut butter swirl—bonded together to form a molecule."

13 "Oh, yes, that makes sense," said Alice. "Atoms bonded together form molecules."

14 "Now, suppose you ordered one scoop of raspberry cheesecake and one scoop of French vanilla. When the girl behind the counter puts those two different flavors of ice cream together in a cone, you've got a molecule made up of atoms of two different elements, which is—"

15 "—a compound!" Alice finished triumphantly. "Trevor, I think I've got it. So let me repeat that back to you, but without the ice cream analogy."

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

16 "Shoot," said Trevor, sitting back in his chair.

17 "An element is a basic substance that is one of the building blocks of matter," Alice said evenly. "The periodic table lists all the elements. An atom is the smallest amount of an element you can have that still has the properties of that element. A molecule is two—"

18 "—or more," Trevor interrupted. "We could get three scoops, or four, or . . ."

19 Alice put up her hand. "A molecule is two or more atoms bonded together. And a compound is a molecule that contains more than one kind of element!"

20 "Outstanding!" her friend said with a smile. "Now let's eat."

21 "Thanks, Trevor," Alice said, getting out her purse. "And to show you how much I appreciate your help, I'm going to buy your ice cream cone. What'll you have?"

22 Trevor's eyes lit up. "I'll have a compound made up of the elements chocolate peanut butter, caramel swirl, and rocky road."

23 Alice laughed. "With those flavors, it'll be a molecule that's definitely a new kind of matter!"

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

1. The word *evaporate* appears several times in the first excerpt. What is the meaning of the word *evaporate*?

   A. to turn from a solid to a liquid

   B. to turn from a liquid to a gas

   C. to turn from a gas to a liquid

   D. to turn from a liquid to a solid

2. Can you provide a detail from paragraph 5 that helps the reader determine the meaning of the word *evaporate*?

3. From the first excerpt, list three ways in which salt is produced. Give the paragraph number where the method is first introduced.

NAME: _____ DATE: _____

4. "Because solar salt production relies on evaporation, it is easy to understand why most salt ponds are located in places that tend to be hot and dry, and have very little rain." Explain why this is easy to understand.

5. We are told that Alice "lamented." From the context, what do you think *lamented* means?

   A. to express sorrow

   B. to express happiness

   C. to express tiredness

   D. to express laziness

   Give a reason from the text for your answer.

6. In the last paragraph of the second excerpt we are told Trevor's eyes "lit up." Is that a literal description? If not, what is it?

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

7. What inference can we make about Alice's feelings about science from the second excerpt?

   A. She hates it.

   B. She is confused by it.

   C. It is her favorite subject.

   D. It is okay but she prefers ice cream.

   Provide evidence from the text, citing the paragraph number or providing quotes, for your answer below.

8. One of these excerpts is informational, and the other is literary. Can you identify which is which? Provide reasons for your answer.

9. For the literary text, can you name some informational elements in that text?

NAME: _____ DATE: _____

10. In the table below, describe how Trevor uses ice cream as an analogy for atoms and compounds.

Concept	**How it links to ice cream**
periodic table of elements	*chalkboard showing ice cream flavors*

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

12. Read both excerpts. Can you use the information on elements and compounds in the second excerpt along with information from the first excerpt to explain why salt is a compound? Reference the text from the excerpts you are using.

13. Read both excerpts. Can you explain, using examples from both excerpts, the differences between an element, a compound, and a solution?

NAME: _____ DATE: _____

14. Reread paragraphs 4 and 5 of the first excerpt. In the space below, write a narrative literary text that conveys the content in these paragraphs. Complete the table underneath your narrative to explain what you have done.

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

The facts I have conveyed	1. 2. 3.
My literary characteristic 1	
My literary characteristic 2	
My literary characteristic 3	

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

Grammar

1. Expand each sentence below using descriptive details, including adjectives and adverbs. You may replace words if you maintain the same meaning.
   - Amy solved the case.
   - I listened to Trevor's explanation.
   - She walked into the ice cream parlor.

2. Combine each pair of sentences below and underline the linking word you have used.
   - I went into the ice cream parlor. The owner smiled at me.
   - I went into the ice cream parlor. I was hungry.
   - I went into the ice cream parlor. I walked right out again.

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

3. Reduce each of the following sentences to be as concise as possible.

   - The ice cream, soft and tingly on the tongue, made me sigh with pleasure as I devoured it.
   - Salt, which is a fascinating compound, can be extracted in many ways, some of them from ancient times, while some are more modern.

_____

_____

_____

_____

4. Circle the subject of each sentence below and then insert a comma after the introductory element.

   A. To be first in line Alice had to queue outside the parlor for a long time.

   B. Realizing she was annoyed Trevor let Alice finish her sentence.

   C. Putting her hand in her pocket Alice said, "I'll buy this."

5. Insert a comma into each of the sentences below in the relevant place and circle it.

   A. You think I'm talking too much don't you?

   B. Yes I suppose I do.

   C. It wouldn't help if I taped my mouth shut would it?

   D. No I don't think that's a good idea.

NAME: _____ DATE: _____

6. Use the events below to construct sentences in the past perfect tense.

   Event 1: going to the ice cream parlor; Event 2: learning about chemistry

   _____

   _____

   Event 1: evaporating seawater; Event 2: extracting salt

   _____

   _____

Morphology

7. Write the correct word to complete each sentence, adding the suffix *–ment*.

   A. Solving the case was a great _____.
   (amaze, achieve, align, excite)

   B. People had different views on the culprit. It caused great _____.
   (agree, disagree, judge, enforce)

ACTIVITY PAGE 15.1

NAME: _____ DATE: _____

8. Write the correct word to complete each sentence:

   A. "I applied three times before I was given _____ to join the fossil dig."
   (admission, permission, remission, emission)

   B. "I _____ that I didn't understand what she was talking about."
   (admitted, emitted, transmitted, permitted)

   C. "Your _____, should you choose to accept it, is . . ."
   (mission, missile, admission, transmission)

NAME: _____ DATE: _____

End-of-Year Assessment—Reading Comprehension

You will read three selections. After reading the first selection, you will answer several questions based on it. Then, you will read the second selection and answer several questions based on it. Finally, you will read the third selection and answer several questions based on it. Some of the questions have two parts. You should answer Part A of the question before you answer Part B.

Passage 1: How the Turkey Buzzard Got His Suit

1 It was a long, long time ago, when the earth was very young. Trees and flowers were growing everywhere, but there were no birds. One morning the Great Spirit drew back the blanket from the door of his wigwam in the sky. He looked upon the earth and smiled, for he saw that his work was good.

2 "Today," thought he, "I will make big birds to fly in and out among the beautiful trees and flowers of the earth, and they shall sing as they fly."

3 Then the Great Spirit spoke, and the treetops were full of birds—but they had no feathers.

4 All day he watched them fly and listened to their songs. But their bodies and long legs did not please him, and before the sun had set he had made feathered suits, of every size and color, to cover them.

5 That night, as the birds hid their heads under their wings, the Great Spirit spoke to them. He told them about the feathered suits he had made for them, and where these suits could be found.

6 A council was called the next day by the birds. They chose *Gah gah go wah*, the Turkey Buzzard, to get the suits. He could fly over a long trail and not be tired.

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

7 The birds told him that if he would go, he could have the first choice of the suits of feathers, but he must not try on any suit more than once.

8 Turkey Buzzard promised not to try on any suit more than once and set out toward the setting sun. Twice the sun set, and three times it rose, before he found the feathered suits. There were many of them, and they were very beautiful. He could not make up his mind about which one he would like best to wear.

9 Then he remembered that he could try on each suit of feathers once. So he began to put them on.

10 The feathers of the first suit were too long and trailed on the ground as he walked. He could not fly well in them either. Turkey Buzzard laid that suit aside.

11 The next suit shone like gold, and the feathers were a beautiful yellow. Turkey Buzzard put it on and strutted up and down the forest.

12 "Oh, how handsome I am!" he said. "But I must not keep this, for if I did, I should shine like the face of the Great Spirit that all the other birds would see me."

13 And he slipped off the suit of yellow feathers as quickly as possible.

14 A third suit was of pure white feathers. Turkey Buzzard thought it looked very beautiful and it was a perfect fit.

15 "But it will get dirty too soon," he said. "I will not choose this."

16 And this, too, was laid aside.

17 There were not enough feathers in the fourth suit so Turkey Buzzard shivered with cold. It was not warm enough, and he would not have it.

NAME: _____ DATE: _____

18 There were too many feathers, and too many pieces, in the fifth suit. It took too much time to put it on, and Turkey Buzzard did not want that.

19 So he went from one suit to another, trying it on and taking it off. Always he had some new fault to find. Something was wrong with each one, nothing quite pleased him, and no suit was just right.

20 At last there was but one suit left, and it was not pretty. It was a plain, dull color and very short of feathers at the neck and head. Turkey Buzzard put it on. He did not like it, and it did not fit him well as it was cut too low in the neck. Turkey Buzzard thought it was the homeliest suit of all. But it was the last suit, so he kept it on.

21 Then *Gah gah go wah*, the Turkey Buzzard, gathered up the suits and flew back to the bird lodge still wearing the plain, dull-colored suit.

22 The birds again called a council. Each was told to select a suit from those that *Gah gah go wah* had brought, and put it on, which they did.

23 Then the birds in their beautiful feathered suits began to walk and fly about the Turkey Buzzard, and to make fun of his plain, dull dress.

24 But *Gah gah go wah* held his head high and walked proudly about among the birds. He looked with scorn on their beautiful suits. After a time he spoke.

25 He said, "*Gah gah go wah*, the Turkey Buzzard, does not want your suits. He had the pick of them all, and he likes his own suit best."

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

Questions

1. Why did the Great Spirit make feathered suits for the birds?

   A. He wanted to use the feathers he had for something.

   B. He couldn't make up his mind about which birds he liked best.

   C. He didn't like the way the birds' bodies and long legs looked.

   D. He wanted the birds to be warm.

2. Why did Turkey Buzzard try on every suit?

   A. He couldn't make up his mind about which would be the best suit to wear.

   B. He wanted to touch all the feathers.

   C. He was told he could try on each suit as many times as he wanted.

   D. He had to fly a long way to get to the suits.

3. A simile compares two things, usually using *like* or *as*. What does the following simile from Paragraph 11 mean?

   > The next suit shone like gold and the feathers were a beautiful yellow.

   A. The suit was dull in color and less attractive than the other suits.

   B. The suit had many colors that made it attractive to look at.

   C. The feathers were made of gold and they shone in the sunlight.

   D. The bright yellow feathers made the suit vibrant and colorful, as if it were made of gold.

NAME: _____ DATE: _____

4. What was wrong with each of the following suits Turkey Buzzard tried on?

Suit	What was wrong with it?
first suit	
next suit	
third suit	
fourth suit	
fifth suit	

The following question has two parts. Answer Part A and then answer Part B.

5. **Part A**: What is the meaning of the word *homeliest* in the following sentence from paragraph 20?

> Turkey Buzzard thought it was the homeliest suit of all.

A. colorful

B. itchy

C. appealing

D. unattractive

Part B: Underline the words and phrases in the text that helped you determine the meaning of *homeliest*.

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

6. Why did Turkey Buzzard hold his head high and walk proudly in his chosen suit among the other birds?

NAME: _____ DATE: _____

Passage 2: Titian

1 We have seen how most of the great painters loved to paint scenes which they had known when they were boys. They clearly and vividly remembered these scenes all their lives. So when we come to the great Venetian painter Titian, we look with interest to see where he was born. This will help us know what pictures of nature he had in his mind when he was still a boy.

2 At the foot of the Alps lies the little town of Cadore on the Pieve River. This is where Titian was born. On every side rise great masses of rugged mountains towering up to the sky, with jagged peaks and curious fantastic shapes. Clouds float around their summits. The mist will often wrap them in gloom and give them a strange and awesome look. At the foot of the craggy pass the mountain-torrent of the Pieve roars and tumbles on its way. Far-reaching forests of trees, with weather-beaten, gnarled, old trunks, stand firm against the mountain storms. Beneath their wide-spreading boughs there is a gloominess almost of twilight, showing glimpses here and there of deep purple distances beyond.

3 No wonder Titian loved to paint mountains and was the first to paint a purely landscape picture. He grew up in those strange solemn mountains and the wild country around them, in the deep gloom of the woods and the purple of the distance beyond.

4 The boy's father, Gregorio Vecelli, was one of the nobles of Cadore, but the family was not rich. When Titian was 10 years old he was sent to an uncle in Venice to be taught some trade. He had always been fond of painting. It is said that when he was a very little boy he was found trying to paint a picture with the juices of flowers. His uncle, seeing that the boy had some talent, placed him in the studio of Giovanni Bellini.

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

5 Titian learned much from Bellini. But it was not until he first saw the artist Giorgione's work that he dreamed of what was possible to do with color. From that point forward he began to paint with a marvelous richness of color. This is what made his name famous all over the world.

6 At first, young Titian worked with Giorgione. Together they began to create frescoes on the walls of the Exchange above the Rialto Bridge in Venice. But over time Giorgione grew jealous. Titian's work was praised too highly and was even thought to be the better of the two. So they parted company.

7 It became clear that Titian was another great painter who was likely to bring fame and honor to the city of Venice. He was invited to finish the frescoes in the Grand Council chamber, which Bellini had begun. He was also invited to paint the portraits of the Doges, Venice's rulers.

8 These portraits which Titian painted were greatly admired. All the great princes and nobles desired to have themselves painted by the Venetian artist. The Emperor Charles V himself stopped at Bologna and sent someone to Venice to get Titian. The Emperor was so delighted with Titian's work that he made the painter a knight with a pension, or retirement payment, of two hundred crowns.

9 Fame and wealth awaited Titian wherever he went. Before long he was invited to Rome to paint a portrait of the Pope. There he met Michelangelo, who looked with much interest at his work. Michelangelo praised Titian's work highly, for the use of color was like nothing he had ever seen before.

10 "It is most beautiful," Michelangelo said afterwards to a friend. "But it is a pity that in Venice they do not teach men how to draw as well as how to use color. If this Titian drew as well as he painted, it would be impossible to surpass him."

NAME: _____ DATE: _____

11 But ordinary eyes can find little fault with Titian's drawing, and his portraits are thought to be among the most wonderful ever painted. Besides painting portraits, Titian painted many other kinds of paintings, and these too are considered to be masterpieces.

12 Titian lived to be a very old man, almost a hundred years old. Even as an old man, he was always seen with the brush in his hand, painting some new picture. When he passed away, he left behind many beautiful paintings that adorned the walls of his beloved Venice. In fact, he made the whole world richer and more beautiful.

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

Questions

7. What is the painter Titian known for?

   A. richness of color in landscapes and portraits

   B. religious art

   C. working with the artist Giorgione

   D. being the son of a noble

The following question has two parts. Answer Part A and then answer Part B.

8. **Part A**: What work made it clear that Titian would bring fame and honor to Venice?

   A. the first purely landscape picture he created

   B. pictures he painted using juices of flowers

   C. the portrait of Emperor Charles V

   D. the walls of the Exchange above the Rialto Bridge

   Part B: Why did this work make it clear Titian was a talented painter?

NAME: _____ DATE: _____

9. Why is it not surprising that Titian was the first artist to paint a purely landscape picture?

   A. He grew up in Venice, among the canals and busy trading atmosphere.

   B. He grew up in the mountains, among beautiful, natural scenes.

   C. He grew up in Rome, around religious art commissioned by the pope.

   D. He grew up in a busy city, around lots of people, merchants, and art.

10. What does the following sentence from paragraph 9 mean?

> Fame and wealth awaited Titian wherever he went.

   A. It was hard for Titian to find work no matter where he went.

   B. Titian was so talented that wherever he went he became famous and wealthy.

   C. Titian became famous and wealthy only when he worked with Giorgione.

   D. Titian became famous and wealthy only because he worked with Michelangelo.

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

Passage 3: Improvements in Transportation

Getting Around

1 In the 1700s, America's population grew and spread. One thing became clear: The United States would need to improve its transportation system. Roads were dirt paths really, dusty in summer, muddy in winter, with tree stumps sticking up here and there. These would not do for a growing nation.

2 By 1800, improvements had, in fact, been made on many of the roads that connected the growing cities and towns of the East. They had been widened and were able to handle wagon traffic as well as horses. It was now possible to travel between the main towns by stagecoach.

3 The stagecoach got its name from the fact that it made its journey "in stages": every 15 or 20 miles, the driver of the coach stopped at a station to change the team of horses for the next stage of the journey.

4 Although stagecoach travel was an improvement over travel on horseback, it was still hardly a comfortable experience. You began your trip at 2:00 or 3:00 in the morning. Sitting on hard, wooden seats in a coach without springs, you felt every bump and hole in the unpaved roads. Male passengers learned not to dress in fancy clothes, because when the wheels of the coach got stuck in a mud hole the men were expected to help lift the coach out.

5 When the sun went down and your stagecoach stopped at an inn, you found things hadn't changed much since the early 1700s. You still got a bad meal and a terrible night's sleep. Often travelers slept four in a bed, with males in one bedroom and females in another.

NAME: _____ DATE: _____

Turnpikes

6 Another improvement was the development of roads called turnpikes. Just before 1800, a number of people figured that if they could build good roads, they could charge people for using them. Every ten miles or so, the road's owners would collect a toll, or fee. They did this by placing a pike, or pole, across the road, blocking passage until the traveler paid the toll. That is how the turnpike got its name.When the toll was paid, the pike would be turned, allowing the traveler to pass.

7 Some of these turnpikes were actually paved with stone or gravel. Most, though, were just improved versions of the old dirt road—a little smoother, a little wider, with the tree stumps in them a little lower. But the newer roads were just as dusty and muddy, depending on the season, as the older roads. And most of them ran between the cities of the East, where there were lots of users to pay the tolls. No turnpike ran very far west.

8 None of these improvements, then, answered the growing needs of people who were moving west. There were few roads wide enough for wagons. Pioneers, therefore, still traveled mainly on foot, leading a horse or mule that carried their supplies.

Steamboats

9 Improved roads were a big help, but they were still a very slow and expensive way for westerners to ship their farm products to the markets of the world. Rivers provided a better way to do that. Most of the streams west of the Appalachian Mountains emptied into the Ohio River. The Ohio in turn emptied into the great Mississippi River. That is why so many settlers chose to farm the land along these waterways. They could load their goods on flatboats and float them downstream all the way to the port of New Orleans. From there the goods could be sent by ship anywhere in the world.

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

10 But flatboats could not return upstream against the current without great human effort. Most farmers therefore, after selling their crops in New Orleans, would break up their boats and sell them for lumber. They then returned north by horseback or on foot.

11 Was there some way that would allow river travel to go upstream as well? An American inventor named Robert Fulton believed he knew how. He built a boat and placed two large paddle wheels on its sides. He then installed a steam engine that would turn the paddle wheels, which would work like oars and push the boat through the water.

12 Fulton named his boat the *Clermont*. Others who saw this odd-looking boat laughed and called it a different name: *Fulton's Folly*. But Robert Fulton had the last laugh. In August 1807, the *Clermont* steamed up the Hudson River, against the current, from New York City to Albany—150 miles in only 32 hours. Fulton's steamboat made the trip in far less time than a horse-drawn wagon could, and it carried a much larger cargo. It did not take long for steamboats to make their appearance on the Ohio and Mississippi Rivers, carrying passengers and goods down and especially up these water highways.

NAME: _____ DATE: _____

Questions

11. What improvements in transportation are presented in this passage? Circle all that apply.

    A. roads widened to handle wagons and horses

    B. stagecoach travel

    C. turnpikes

    D. flatboats

    E. steamboats

12. Why did road owners collect a toll?

    _____

    _____

    _____

13. Why were improvements in transportation needed in the United States in the 1700s and 1800s?

    A. The population in the United States was declining, as was the need for transportation was methods.

    B. The population in the United States was growing and spreading, and transportation was needed to accommodate those changes.

    C. People didn't need to use roads and waterways for travel or for shipping goods.

    D. Turnpike developers stopped collecting tolls from travelers using the roads.

ACTIVITY PAGE A.1

NAME: _____ DATE: _____

The following question has two parts. Answer Part A and then answer Part B.

14. **Part A**: What is the meaning of the word *folly* in the following sentence from paragraph 12?

> Others who saw this odd-looking boat laughed and called it a different name: Fulton's Folly.

A. important improvement

B. new approach

C. foolish idea

D. slow method

Part B: What words and phrases in the text helped you determine the meaning of *folly*?

_____

_____

_____

15. The idiom *had the last laugh* means to succeed when others thought you wouldn't. What does it mean in paragraph 12 when it says Fulton had the last laugh?

_____

_____

_____

_____

NAME: _____ DATE: _____

16. Compare and contrast the stagecoach, turnpikes, and the steamboat as improvements in transportation. Which improvement best addressed transportation issues and why?

End-of-Year Reading Comprehension Score: _____ /16 points

To receive a point for a two-part question (i.e., 5, 8, and 14), students must correctly answer both parts of the question.

ACTIVITY PAGE A.2

NAME: _____ DATE: _____

Grade 5 End-of-Year Assessment Summary

Reading Comprehension Assessment

Score Required to Meet Benchmark of 80%	Student Score
13/16	_____/16

Word Reading in Isolation Assessment (if administered)

List the missed letter-sound correspondences and syllabication errors in the spaces below:

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

Other Notes:

_____

_____

_____

_____

_____

_____

NAME: _____ DATE: _____

Fluency Assessment Scoring Sheet

		Words Read in One Minute
____		**Uncorrected Mistakes in One Minute**
		W.C.P.M.

Percentile	Spring Grade 5 W.C.P.M.
90	194
75	168
50	139
25	109
10	83
Comprehension Questions Total Correct _____/4	

Benchmark Fluency: Percentile 50 or above
Student Fluency: _____
Benchmark Comprehension: 3/4 Questions
Student Comprehension: _____/4 Questions

Recommended placement in Grade 6 (check one)

____ CKLA Grade 6 without reservation

____ CKLA Grade 6 with additional support

____ Intensive remedial intervention

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

End-of-Year Grammar Assessment

Read and answer each question.

For each sentence, draw a vertical line separating the subject and predicate. Circle the entire subject. Draw a wiggly line under the entire predicate.

1. Copernicus observed that the planets moved in ways that didn't agree with the long-held geocentric model.

2. The Maya and the Aztec civilizations developed in Mesoamerica.

Read each pair of sentences about Don Quixote. If the information in the pair of sentences is similar, rewrite the two sentences using a transition word or phrase that compares the two sentences. If the information in a pair of sentences is different, combine the sentences using a word or phrase that contrasts the two sentences.

Words and Phrases That Compare	**Words and Phrases That Contrast**
in the same way	on the other hand
similarly	alternatively
just as	in contrast
also	instead

3. Don Quixote thought he saw a man wearing an enchanted helmet. Sancho saw a barber riding a donkey and wearing a basin on his head to protect it from the rain.

_____

_____

_____

NAME: _____ DATE: _____

4. Don Quixote meddled in an interaction between a farmer and a young boy. Don Quixote meddled in a situation with merchants and servants.

_____

_____

_____

5. Don Quixote is idealistic, or thinks positively about things. Sancho is realistic, or sees things the way they actually are.

_____

_____

_____

For each of the following sentences, identify the subject by circling it. Then identify the verb. If it is an action verb, underline it with a straight line. If it is a linking verb, underline it with a wiggly line.

6. Guild members in Florence chose Ghiberti to help Brunelleschi build the cathedral dome.

7. Brunelleschi was angry.

8. In the summer of 1911, Ishi emerged from the wilderness in Oroville.

9. He was a very unusual sight.

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

Use the information provided in the "Subject" and "Verb" columns of the following chart to fill in the "Agreement in the Present Tense" column so the subject and verb are in agreement in the present tense.

Subject	Verb	Agreement in the Present Tense
I	**to be**	10.
the sky	**to look**	11.
the authors	**write**	12.
he	**to see**	13.
they	**run**	14.
we	**to be**	15.

Write a complete sentence for any of the subject-verb agreement statements you created in the chart.

16. _____

_____

_____

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

For each of the following items in a series, write a complete sentence using commas correctly.

crisp air colorful leaves hot cider

17. _____

_____

_____

carrots peas potatoes

18. _____

_____

_____

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

Use the information provided in the "Subject" and "Verb" columns of the following chart to fill in the "Agreement in the Past Tense" column so the subject and verb are in agreement in the past tense.

Subject	**Verb**	**Agreement in the Past Tense**
Leonardo da Vinci	to have	19.
Native Americans	to be	20.
Jacob	to see	21.
I	to be	22.
we	to have	23.
she	to feel	24

Write a complete sentence for any of the subject-verb agreement statements you created in the chart.

25. _____

_____

_____

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

Use the correct preposition from the word box to complete each sentence. Then write the function (place, time, or partner) in the box below the preposition.

out	with	after	in

26. Galileo was born _____ Pisa, Italy, in 1564 CE and lived _____ Copernicus, building on Copernicus's work.

27. The Arapahoe and Cheyenne fought _____ the Lakota at the Battle of the Little Bighorn.

For each pair of words, write a sentence using the correlative conjunctions correctly.

28. *not only/but also*

_____

_____

_____

29. *either/or*

_____

_____

_____

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

Underline the interjection in each sentence. Then write the type of interjection on the line that follows, *strong* or *mild*.

30. Stop! There might be poison ivy under that bush.

    Type: _____

31. Oh, let's come back later when the store is less crowded.

    Type: _____

For each word provided in Column 1: Word(s), write one correct pronoun in Column 2: Pronoun.

Column 1: Word(s)	**Column 2: Pronoun**
Isabella d'Este	32.
the clouds	33.
Mom, Dad, and I	34.
the teacher	35.
Martin Luther	36.
my sister	37.

NAME: _____ DATE: _____

Select one row from the chart, and write two sentences. The first sentence should use the noun in Column 1: Word(s) as the subject, and the second sentence should use the pronoun in Column 2: Pronoun as the subject.

38. _____

_____

_____

_____

Fill in the blanks with the correct pronoun antecedent from the box.

his	her	their	its

39. Martin Luther nailed _____ Ninety-Five Theses to the church door at the University of Wittenberg.

40. Both the Maya and the Aztec built temples in _____ important city centers.

41. The woman shown in Leonardo da Vinci's painting *Mona Lisa* is well-known for

    _____ mysterious smile.

42. When Native Americans on the Great Plains hunted the buffalo, they used

    _____ hide for clothing, tepee covers, bedding, and moccasins.

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

Add a comma in the appropriate place for each of the following sentences.

43. First I will finish my homework.

44. Oh Roberto said it would be easy and it was!

45. Well we won't get to the field before the game starts.

Read each set of sentences. If the verb tenses are the same and correct, put a ✓ (check mark). If there is an inappropriate shift in verb tense, put an X on the line. Rewrite the sentence(s) marked with an X with the correct verb tense(s).

46. _____ Don Quixote tried to do what he thought was right. Sometimes he will make mistakes when he will attempt to fix things.

    Rewrite sentence(s), if needed:

    _____

    _____

47. _____ Rather than conquer or tame the land, Native Americans blended into the land. They built sturdy, cozy houses.

    Rewrite sentence(s), if needed:

    _____

    _____

ACTIVITY PAGE A.3

NAME: _____ DATE: _____

Fill in the blanks with the best transitional words or phrases that help make the sentences flow together.

48. Don Quixote and Sancho Panza traveled for days. (*First/At last*)

    _____, they arrived home.

49. Custer was sure he and his soldiers would win the Battle of the Little Bighorn.

    (*Next/In the end*) _____, though, the Lakota and their allies won.

Insert a comma in the correct place in the following sentences.

50. No we won't have time to stop at the craft store before dinner.

51. Teresa can you please fill this cup with water for the experiment?

52. Saturday is the first day of spring isn't it?

Circle the correct way to write the following titles.

53.	Chapter	"Myths of the Maya"	Myths of the Maya
54.	Book	"Shifts in Power"	*Shifts in Power*
55.	Work of Art	"Self-Portrait" by Sofonisba Anguissola	*Self-Portrait* by Sofonisba Anguissola

End-of-Year Grammar Score: _____ /55 points

ACTIVITY PAGE A.4

NAME: DATE:

Word Reading in Isolation Assessment Scoring Sheet

	a	b	c	d	e
1	steady /sted*ee/ closed * open	asphalt /as*fawlt/ closed * digraph	oxygen /ox*ij*ən/ closed * closed * closed	dovetail /duv*tael/ digraph * digraph	birthplace /berth*plaes/ r-controlled * digraph
2	bravo /brov*oe/ closed * open	washtub /wosh*tub/ closed * closed	consume /kun*soom/ closed * digraph	delight /də*liet/ ə * digraph	council /koun*səl/ digraph * ə
3	accuse /ə*kuez/ ə * digraph	riddle /rid*əl/ closed * –le	trolley /trol*ee/ closed * open	scoreboard /skor*bord/ r-controlled * r-controlled	cruise /krooz/
4	marvelous /mar*vəl*us/ r-cont. * ə * digraph	betrayal /bə*trae*əl/ ə * digraph * ə	freighter /fraet*er/ digraph * r-controlled	floored /flord/	guarantee /gaer*ən*tee/ r-cont. * closed * open
5	blizzard /bliz*erd/ closed * r-controlled	prairie /praer*ee/ r-controlled * open	concrete /kon*kreet/ closed * digraph	crescent /kres*ent/ closed * closed	bowlful /boel*fəl/ digraph * ə
6	breakwater /braek*wot*er/ digraph * closed * r-controlled	peachy /peech*ee/ digraph * open	spiffier /spif*ee*er/ closed * open * r-cont.	gherkin /ger*kin/ r-controlled * closed	qualify /quol*if*ie/ closed * closed * open
7	yearning /yern*ing/ r-controlled * closed	exercise /ex*er*siez/ closed * r-cont. * digraph	loathe /loeth/	ivory /ie*vree/ open * open	disprove /dis*proov/ closed * digraph

NAME: _____ DATE: _____

ACTIVITY PAGE A.4

Word Reading in Isolation Assessment Scoring Sheet

	a	b	c	d	e
8	audit /aw*dit/ digraph * closed	baboon /bab*oon/ closed * digraph	continue /kun*tin*ue/ closed * closed * open	taught /tawt/	overdue /oe*ver*doo/ open * r-cont. * digraph
9	chasm /kaz*əm/ closed * closed	human /hue*mən/ open * closed	pulled /poold/	warning /worn*ing/ r-controlled * closed	worthless /werth*les/ r-controlled * closed
10	scowl /skoul/	avoidance /ə*void*əns/ ə * digraph * closed	paperboy /pae*per*boi/ open * r-cont. * digraph	courses /kors*ez/ r-controlled * closed	woodchuck /wood*chuk/ digraph * closed
11	switch /swich/	crumb /krum/	whopper /wop*er/ closed * r-controlled	sprinkle /spring*kəl/ closed * –le	knitting /nit*ing/ closed * closed
12	calculate /kal*kue*laet/ closed * open * digraph	mustache /mus*tash/ closed * closed	partridge /par*trij/ r-controlled * closed	singe /sinj/	assign /ə*sien/ ə * digraph
13	wriggle /rig*əl/ closed * –le	bizarre /biz*ar/ closed * r-controlled	recommit /ree*kum*it/ open * closed * closed	youthful /yooth*fəl/ digraph * ə	mistletoe /mis*əl*toe/ closed * –le * open

ACTIVITY PAGE A.5

NAME: _____ DATE: _____

End-of-Year Fluency Assessment Recording Copy

Birds

Birds have several characteristics that enable them to fly, but being warm-blooded 19
is essential to flight. They have a very high metabolism as only warm-blooded animals 32
do. Metabolism is the process which produces energy in most animals' bodies. The 45
high metabolism of birds is a steady flow of energy that helps them maintain the high 61
levels of activity required by flight. The higher the activity level of an animal, the higher 77
its metabolism is likely to be. What this means when it comes to eating is that they need 95
lots of food to maintain that energy. 102

Have you ever heard the saying *eats like a bird* for someone who eats very small 118
amounts of food at one time? An important thing to remember about this expression 132
is that it does not mean birds do not eat very much. In fact, birds need to eat two times 151
their body weight in food every day. This is because they have such a high metabolism 168
and burn lots more energy than most animals. There are lots of small meals a day for 185
birds. So, someone who "eats like a bird" is usually someone who "picks" at his or her 202
food and only eats small bits at a time. 211

Cold-blooded animals depend on their surroundings to regulate internal body 221
temperatures. But warm-blooded animals are able to produce heat for energy within 233
their own bodies. They can travel farther and live in more extreme conditions than cold- 248
blooded animals. The only warm-blooded animals that are able to go without food for 261
long periods of time are hibernating animals. That's because their metabolism slows 273
way down when they are hibernating, and they require less energy to stay alive. 287

Wings are also essential to flight. The shape of a bird's wings determines how far 302
and high a bird can fly, in addition to its lightweight bones. 314

ACTIVITY PAGE A.5

NAME: _____ DATE: _____

What else helps all birds fly? Feathers are a great help, serving as lightweight 328
coverings for their wings. They mesh together as their wings flap downward, parting 341
again to let air through as their wings sweep upward again. Feathers also act as 356
insulation. Insulation is an extra layer that protects birds' skin from the sun and traps 371
in heat. The trapped heat provides energy and warmth in the winter months. The point 386
of the feather where it is attached to a bird's body is called the quill. All birds have 404
feathers. No other animals do, so if you spot a feathered friend, you may assume that 420
it's a bird. Because their precious feathers take quite a beating, birds take good care of 436
them. Birds often preen their feathers with their beaks to keep them clean, waterproof, 450
and in the right position. 455

Word Count: 455

ACTIVITY PAGE A.6

NAME: _____ DATE: _____

End-of-Year Morphology Assessment

Read and answer each question. Some questions have two parts. Answer Part A and then answer Part B.

For 1 and 2, write the correct word to complete each sentence.

1. Be sure to take your time when you write the note, because the last time, your handwriting was _____ , and I couldn't figure out the message.
   (legible, illegible, legal, illegal)

2. I have a _____ piano lesson each week that I attend on Tuesday of each week.
   (responsible, irresponsible, regular, irregular)

3. If someone is working on an *international* project, what does that mean?

   A. That person is working on a project that involves one or more countries outside of the country in which he or she lives.

   B. That person is working on a project alone with no help.

   C. That person is working on a project for the country where he or she lives.

   D. That person is working on a project with one other person.

4. If you *distract* someone from what they are doing, you are _____

   A. helping them concentrate

   B. adding more work for them to complete

   C. taking their attention away from what they are doing

   D. asking them to explain what they are doing

NAME: _____ DATE: _____

5. Which of the following words with the suffix *–ness* means the state or condition of being about to fall asleep?

   A. steadiness

   B. crispness

   C. drowsiness

   D. emptiness

The following question has two parts. Answer Part A and then answer Part B.

6. **Part A**: Which of the following roots means "to empty"?

   A. *tract*

   B. *mem*

   C. *cred*

   D. *vac*

   Part B: Choose the word with the root that means "to empty" and write a sentence using the word.

   A. tractor

   B. remember

   C. credible

   D. evacuate

   Sentence: _____

   _____

   _____

ACTIVITY PAGE A.6

NAME: _____ DATE: _____

For 7 and 8, write the correct word to complete each sentence.

7. The man was clearly _____ about waiting in line
(mobile, immobile, patient, impatient)
for his turn to purchase his items at the store, as he kept checking his watch.

8. My science project is _____ because I haven't
(audible, inaudible, complete, incomplete)
finished the last part.

9. If the dentist extracts a tooth from your mouth, what does the dentist do?

   A. The dentist puts in another tooth.

   B. The dentist pulls out a tooth.

   C. The dentist cleans a tooth.

   D. The dentist protects a tooth.

The following question has two parts. Answer Part A and then answer Part B.

10. **Part A**: What does the root *serv* mean?

    A. *to empty*

    B. *to save, protect, or serve*

    C. *to draw or pull*

    D. *to remember or recall*

    Part B: Write a sentence using the word *conserve*. Make sure the sentence demonstrates the meaning of the word.

_____

_____

NAME: _____ DATE: _____

11. Which of the following demonstrates the meaning of the word *enable*?

    A. severe drought preventing farmers from getting good crops

    B. getting a good night's sleep before an important soccer game in order to play well

    C. misplacing the library book you need for your history project

    D. running late for school because you overslept

12. If someone is a *scientist*, what does that person do?

    A. performs a musical solo

    B. plays the piano

    C. works in a branch of science

    D. makes art

13. A *credible* source is one that is _____.

    A. not trustworthy

    B. trustworthy

    C. remembered

    D. not remembered

14. Circle the correct prefix to add to the root word in the following sentence.

im–	*in–*	*post–*	*fore–*

Not every baseball team plays games during the _____ season because only the teams that did the best during the regular season continue to play.

ACTIVITY PAGE A.6

NAME: _____ DATE: _____

For 15 and 16, write the correct word to complete each sentence.

15. The police officer had to _____ traffic through
(cancel, cancellation, direct, direction)
the intersection because the stoplights weren't working.

16. Please tell me what _____ I should make to my
(revise, revisions, decide, decisions)
essay about Don Quixote.

17. Which of the following words with the root *mem* means "easy to remember for a particular reason"?

    A. *memoir*

    B. *remember*

    C. *commemorate*

    D. *memorable*

NAME: _____ DATE: _____

18. Explain what the following statement means:

> She had the *foresight* to save money early so when she retired, she could live comfortably.

_____

_____

_____

End-of-Year Morphology Score: _____ /18 points

NAME:_____ DATE:_____

NAME:_____ DATE:_____

NAME:_____ DATE:_____

NAME:_____ DATE:_____

NAME:_____ DATE:_____

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