TIGERS SCIENCE MIDTERM REVIEW

Name:

Answer each question.

1) The process of obtaining information by using your senses is called

2) Students notice that the fall leaves of sugar maple trees turn red, but the leaves of the black oak trees turn brown. The students are making

3) When planning a scientific investigation, what is the first thing scientists do?

4) A testable possible answer to a scientific question is a(n) .

5) A decision you make based on information is a(n) .

6) Which is a statement of what you think will happen during an investigation?

7) Steps to follow to test an idea.

8) A scientific investigation usually begins with

9) A procedure carried out to gather data about an object or event is a/an .

10) What does a scientist do to test a hypothesis?

_____

11) Information collected during an investigation to support a hypothesis is .

12) How do you test an hypothesis?

_____

13) Science is the study of the natural world and involves making observations and performing investigations.

14) A factor that changes and might affect the outcome of an experiment is called a .

15) What are the step-by-step instructions for completing a task?

16) What is another word for hypothesis?

17) What is an experiment?

18) The climate of an area is

_____

19) A variable is

20) When you analyze the data, you are done with the experiment.

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. Use Line
11. _____
12. Use Line
13. _____
14. _____
15. _____
16. _____
17. _____
18. Use Line
19. Use Line
20. _____

Sum It Up!

When you're done, use the answer key to check and revise your work.

Read the summary, and fill in the missing words.

The goal of a scientist is to understand the natural world. To do this, a scientist plans and conducts 1. _____.

Scientists use the 2. _____ they gather to draw 3. _____.

A good scientist does not let his or her personal beliefs, or 4. _____, influence their study.

There are many important skills that scientists use. For example, when scientists 5. _____, they use their observations and prior knowledge to determine what is happening.

Read each of the statements below. Write the science skill that each student used.

6. Angela made a list of how the two planets were alike.

_____

7. Krystal sorted the rocks into five groups based on their color.

_____

8. Robbie explained the results of his investigation to his classmates.

_____

9. Dmitri noted how the feathers looked and felt.

_____

10. Juan organized the steps of the process from first to last.

_____

Answer Key: 1. investigations 2. evidence 3. conclusions 4. opinions 5. infer 6. compare 7. classify 8. communicate 9. observe 10. order

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Brain Check

Lesson 1

Name _____

Word Play

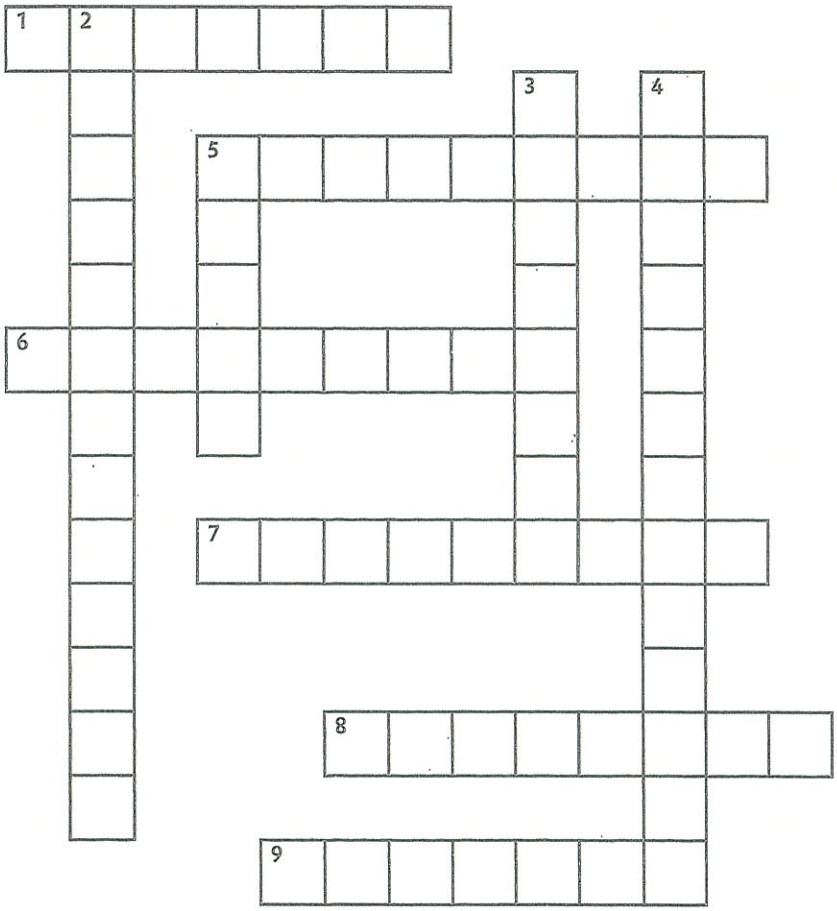
1 Complete the crossword puzzle. If you need help, use the terms in the yellow box.

Across

1. The study of the natural world through investigation
5. Collecting information by using the senses
6. An idea or a conclusion based on an observation
7. Facts and information collected over time
8. To put things into groups
9. A belief or a judgment

Down

2. The sharing of information
3. The observations and information that support a conclusion
4. The process of studying or testing something to learn more about it
5. To arrange things by when they happened or by their size



classify	communication	evidence*	inference	investigation*
knowledge	observing	opinion*	order	science*

* Key Lesson Vocabulary

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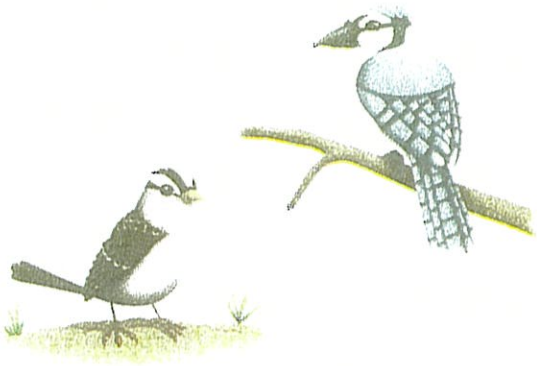
Apply Concepts

2 Compare these two birds. List how they look similar and different.



Similarities:

_____

_____

Differences:

_____

_____

3 Suppose someone tells you they saw a bird never before seen in your state. What kinds of evidence would you ask for?

_____

_____

_____

4 What, in your opinion, is the scariest animal on Earth? How should this affect your investigations?

_____

_____

_____

5 One morning you see an outdoor garbage can tipped over. Plastic bags are torn open. What could you infer?

_____

_____

_____

Take It Home!

How can you communicate with people around the world, collect real data, and help answer a question? Research citizen science projects online. Choose an interesting project. Participate with your family.

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A Process *for* Science

Testing bridge models, mapping a storm's path, searching the sky for distant planets—each of these investigations uses scientific methods.

Active Reading As you read these two pages, draw a line under each main idea.

How does the shape of the room affect the sound of a voice?

How does having a cold affect a person's singing?

Can a human voice shatter glass?

How high a note can a singer sing?

Start with a Question

Scientists observe the world and then ask questions that are based on their observations. But not all questions are the same. A good scientific question is one that can be answered by investigation. A scientific investigation always begins with a question.

Plan an Investigation

Once a scientist has a testable question, it is time to plan an investigation. **Scientific methods** are ways that scientists perform investigations. There are many ways that scientists investigate the world. But all scientific methods use logic and reasoning.

▶ Suppose you've just heard an opera singer warm up her voice. Write your own science question about the sounds a singer makes.

_____

_____

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Experiments

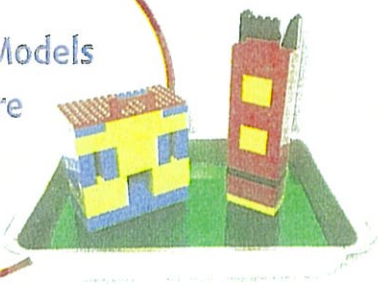
In an experiment, scientists control all the conditions of the investigation. Scientists study what happens to a group of samples that are all the same except for one difference.

Repeated Observations

Scientists use repeated observation to study processes in nature that they can observe but can't control.

Using Models

Scientists use models when they cannot experiment on the real thing. Models help scientists investigate things that are large (like a planet), expensive (like a bridge), or uncontrollable (like the weather).



Investigations Differ

The method a scientist uses depends on the question he or she is investigating. An **experiment** is an investigation in which all of the conditions are controlled. Models are used to represent real objects or processes. Scientists make repeated observations to study processes in nature without disturbing them.

Drawing Conclusions

Whatever scientific methods are used, scientists will have results they can use to draw conclusions. The conclusions may answer the question they asked before they began. They may point to other questions and many more ideas for investigations.

▶ Write the type of investigation you should use to answer the following questions.

How do different bridge designs react to strong winds?

_____

How fast does the wind blow where a bridge will be built?

_____

Which type of paint works best to keep a bridge from rusting?

_____

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