

Adapting to Survive

Cross-Curricular Focus: Life Science



Living things adapt to their environment so they can **survive**. An organism **adapts** when it develops a **behavior** that makes it more likely to survive. It can also adapt by forming a physical characteristic or body part that helps it survive.

In a forest biome, some trees grow taller than the other plants around them. This lets them reach the sunlight. Growing taller is an adaptation that helps trees survive. Shorter plants have adapted with their behavior. They have learned to live in the shade with less sunlight.

Animals in the forest have a wide variety of adaptations. Monkeys have long tails. They can use them almost like another hand. This helps them swing quickly through the tops of trees. They can even do this while holding their babies or gathering food. Giraffes need to reach leaves at the tops of tall trees. Having a long neck is an adaptation that allows them to do this.

Some animals' adaptations prevent other animals from wanting to eat them. A skunk's horrible smell makes larger animals choose something else to eat. Even plants sometimes protect themselves in this way. Roses and acacia trees both have dangerous thorns. The thorns prevent animals from eating their leaves.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What are the two main ways that an organism adapts?

2) What is one animal adaptation you read about in the passage?

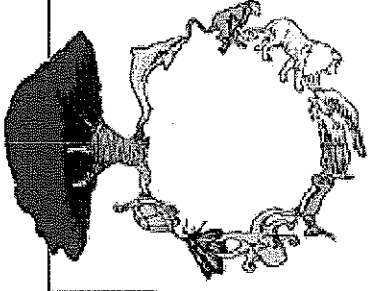
3) Is the animal adaptation you chose a physical or behavioral adaptation?

4) What is one plant adaptation you read about in the passage?

5) Is the plant adaptation you chose a physical or behavioral adaptation?

Competing for Resources

Cross-Curricular Focus: Life Science



The resources of any one environment are limited. Depending on which plants and animals share the environment, there may not be enough of everything to go around. All organisms need water, food and shelter to stay alive. These resources are **beneficial**, which means they are good for the organisms. When an environment is low on any of these things, organisms must compete for them. Those who get to the resources first have the best chance of survival. Being without water, food or shelter for very long is **detrimental**, which means it is harmful to organisms.

The resources in an area determine how big the plant and animal populations can be. Sometimes there are too many living things in an area. The weakest of the populations will not be able to get the resources they need. As the weak die out, the populations get smaller. Finally, the area's resources recover and can support them again.

Sometimes people will capture members of large animal populations and move them. They take them to another location with less competition. This helps them the animals survive.

Sometimes the government will allow hunting of large animal populations. Deer and rabbits can be a good food source for people. When there are too many of these animals in an area, they sometimes come into the cities looking for food. They often cause trouble. Hunting keeps the number of animals under control.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Why do organisms sometimes have to compete for resources?

2) What kinds of things are beneficial for organisms?

3) What kinds of things are detrimental for organisms?

4) What happens when populations grow too large for an area?

5) Do you think hunting or relocation is a better solution for over-sized animal populations? Why?

Habitat Destruction

Cross-Curricular Focus: Life Science



Humans are the leading cause of plants and animals becoming endangered or extinct. An endangered species has so few members that the species may die out. Unless something is done to protect an endangered species, they will be gone forever. We will not have any more of that kind of plant or animal on Earth.

The most dangerous thing humans do to endangered animals is **destroy** their habitats. This is usually because we do not pay very close attention. When there is an area of land we want to use, we don't notice what is already living there.

Thousands of acres of tropical **forest**, or rainforest, have been destroyed by humans. People wanted the land and lumber for building projects. Countless plants and animals have been lost in this one habitat alone. Many of the organisms that live in the tropical rainforest do not live anywhere else. We are just beginning to discover medicines and other resources there. We risk losing that knowledge if more species die out.

Most of us don't live near a tropical rainforest. However, that does not mean we are far away from habitat destruction. When a town expands, more houses and businesses are built. The town pushes the local wildlife farther from its natural habitat. **Wetlands** and **grasslands** are unique habitats that are especially at risk. Thankfully, people are more aware of the problem. This is the first step toward protecting habitats.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Why are so many plants and animals endangered?

2) What do we risk losing in addition to plants and animals if we continue to destroy rainforests?

3) What happens when towns want to expand onto more land?

4) What kinds of habitat are especially at risk?

5) How can we help prevent more habitat destruction?

Evaluating in Math

Cross-Curricular Focus: Mathematics



You have learned to do all different kinds of math by now. You have probably heard the word *solve* used a lot. When you see the word **solve**, you understand that it means to figure out the answer to a math problem. As you get older, you may see other words used to give math directions. There may be some that you have never heard before. You just need to learn the new vocabulary. It can be even more confusing when you see a word you think you understand. Surprise! It's being used in a different way.

You may have learned the word **evaluate** when you were asked to decide if something was good or bad. You may have used it to decide if an author did a good job sending a message in his writing. This year, you may begin to see the word **evaluate** used in a different way.

Sometimes math directions with say something like "Evaluate the following problems." When it is used in math, **evaluate** can be a synonym for solve. Do you see the smaller word, *value*, inside the word **evaluate**? When you **evaluate** math, you say its final value. Value is the total after the equation is solved. So all it is asking you to do is solve the math problems and write down the answers.

As with any kind of math work or tests, it is always a good idea to show your work. This lets the teacher know what you understand. You may get credit even if you end up with a wrong answer.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What does it mean to solve a problem?

2) Why might the word **evaluate** be confusing when you see it in math for the first time?

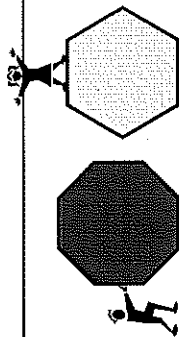
3) What does the word *synonym* mean in the third paragraph?

4) Why is it important to always show your work when you do math?

5) What does **evaluate** mean in math?

Geometric Shape Names

Cross-Curricular Focus: Mathematics



Many geometric shapes are named based on the number of sides that they have. It's helpful to learn the meaning of these number prefixes. It can be like a secret code that helps you know the meaning of other complex words that use the same prefixes.

Triangles have three sides and three angles. The prefix *tri-* means *three*. Words that use the prefix *tri-* usually have something to do with three parts. For example, a tripod is a camera stand that has three legs. A triathlon is a difficult sports event in which the competitors have to participate in three different activities, such as running, swimming, and bicycling.

Quadrilaterals have four sides and four angles. The prefix *quad-* means *four*. A quadrant is a graphing chart with four sections. Dirt bikes with four wheels are called quads. The muscles in your arms that connect in four places are called quadriceps.

Pentagons have five sides and five angles. The prefix *penta-* means *five*. A pentagram is a five-pointed star. Poetry measured in groups of five syllable pairs is called pentameter.

Octagons have eight sides and eight angles. The prefix *oct-* means *eight*. An octopus has eight tentacles. A musical octave has eight notes. Octuplets are eight babies who are born at the same time to the same mother.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) How do number prefixes help you understand the meaning of new words?

2) What do words that begin with *tri-* have in common?

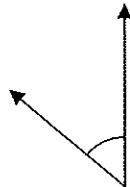
3) A *duet* is a song performed by two people. Based on the meaning of the prefix, what do you expect the word *octet* to mean?

4) *Triple* is three times the amount. Based on the meaning of the prefix, what do you expect the word *quadruple* to mean?

5) A *decagon* has ten sides. Why do we call a decimal a decimal?

Kinds of Angles

Cross-Curricular Focus: Mathematics



Did you know that **angles** are measured with circles? An angle is a slice of a circle. Look at the two rays that are the arms of an angle. They come to a point where their endpoints meet. You can almost see it as a slice of pie. The whole pie, a full circle, has 360° . If we cut the circle up into 360 equal parts, each part would be one degree. We measure angles by how many of those tiny parts, or degrees, fit between the two arms of the angle.

If an angle has exactly 90° it is called a **right angle**. Two perpendicular lines form a right angle. A right angle has a perfectly square corner, like we see on a square or a rectangle. If the angle has less than 90° it is called an **acute angle**. All acute angles are smaller than right angles. An acute angle fits inside the arms of a right angle if you placed the angles on top of each other. If the angle has more than 90° it is called an **obtuse angle**. All obtuse angles are bigger than right angles. A right angle could fit inside the arm of an obtuse angle.

Did you know that even a straight line is an angle? It's called a straight angle. It measures 180° , exactly half of a circle. An angle that is so large that it bends past the straight line, but is still smaller than a full circle, is called reflex angle. It's fun to work angles!

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What shape helps us measure angles?

2) What kind of angles are a part of squares and rectangles?

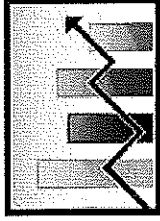
3) What unit do we use to measure angles?

4) What is the difference between an acute angle and an obtuse angle?

5) Describe your favorite kind of angle. Why is it your favorite?

Displaying Data

Cross-Curricular Focus: Mathematics



There are many kinds of graphs that can be used to show information. Another name for information is **data**. Graphs make reports and science research more powerful. They let us see with our eyes what the numbers actually mean. They bring the numbers to life so we can **analyze** them. We can look at the results and understand them better.

You choose a graph depending on what you want to show. Certain kinds of graphs are better than others to make information stand out. When you have data to include in a report or presentation, choose the one that fits your data best.

A pie chart is good for showing a part of a whole. A line graph is an excellent choice if you want to **describe** how something changes over time. It is also good for showing big differences. Use it to compare the **highest** and lowest numbers or the **shortest** and **tallest** plants. Data is represented with pictures or symbols on a pictograph. Each picture or symbol can represent whatever number of items you choose. A colorful bar graph can show changes over time. You can also use it to make comparisons between two or more things. A Venn diagram uses two overlapping circles. They are perfect for sorting information. You can use them to sort plants, for example. Plants with green leaves go on the left. Plants with flowers go on the right. Plants with both go in the middle where the circles overlap.

Choosing the right graph can help you create a better project. Your data will be displayed clearly for others to understand.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Why should you use graphs to display your data?

2) If you wanted to show how much of your allowance you spent on each thing you bought, which graph would be a good choice?

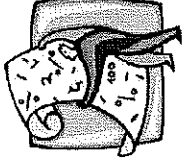
3) Which kind of graph allows you to use lots of color to display your data?

4) How is a Venn diagram used?

5) What kind of graph would you be willing to try using on your next project? Why?

Estimation

Cross-Curricular Focus: Mathematics



When you don't need an exact answer, use **estimation**. It's a good way to quickly figure out a math problem. This skill can help you in real life.

When you are shopping with only a little money, you can estimate. You can round the cost of items up to the nearest dollar. Add each item in your head as you shop. If you estimate, you won't buy more than you can afford.

You can estimate even before you go shopping. You can round the cost of each item you need for a project to the nearest dollar. Add them up to figure out about how much the project will cost all together.

Businesses also use estimates. A business that provides a service often tells you about how much you can expect to pay. This is an estimate of the cost. The mechanic tells you about how much your car repairs will be. You can decide if you want to spend the money or not.

Estimation can also help you decide if your answer is **reasonable**. You can check your answer by rounding. Get an approximate answer to the math problem. Your estimate should be fairly close to your exact answer. An estimate that is very different helps you recognize a mistake. If there is a difference of hundreds or thousands, you may have an error in place value. This is especially true when you have long columns of numbers to add together. It can also happen easily when you have very large numbers with regrouping. If you make it a habit to check your answers using estimation, you will avoid mistakes.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What is one situation where you might want to use estimation? _____

2) Based on the reading passage, what do you think the word reasonable means in the fifth paragraph? _____

3) What should you do if your estimate is a lot different from your exact answer? _____

4) Why should you always check your answers using a second method of problem-solving, such as estimation? _____

5) When have you used estimation? Explain. _____

Three Levels of Government

Cross-Curricular Focus: History/Social Sciences



There are three different levels of government: local, state and **federal**. Each level of government has its own elected officials who have specific jobs to do. Adult American citizens have a voice in all three levels of government. Their voice is their vote.

Local government is the level that is closest to the community. People in the neighborhood elect a mayor and city council members. Town meetings allow the people to bring their concerns to their elected leaders. The mayor and city council members pass **laws**. The laws affect the city and the people who live there.

State government is in charge of writing and enforcing laws for all the people within one state. The people of the state elect a governor and representatives who handle business for the state. Special state departments handle issues for the state. They protect the health and safety of state citizens.

The federal government is in charge of writing and enforcing laws for the people in the United States. The people of the United States elect a president, senators, and representatives. These officials handle business that affects the whole country. The federal level of government is able to do some things the other levels cannot. It can print money. It can negotiate with other countries. It can declare war on another country.

Each level of government has specific officials and duties. The people entrust their power to their leaders. It is their responsibility to protect the interests and safety of the people.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What are the three levels of government?

2) How does the average person have a voice in government?

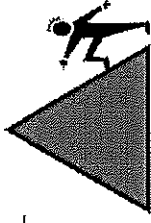
3) Which level of government has the ability to print money?

4) Which level of government has a governor?

5) Which level of government is closest to the community?

Classifying Triangles

Cross-Curricular Focus: Mathematics



Every triangle has three sides and three angles. The angles always add up to 180° . There are some differences in triangles, though. You may have noticed that they can be shaped slightly differently. They can have different-sized angles. They can have sides that are different lengths. There are three kinds of triangles. Triangles can be **equilateral**, **isosceles**, or **scalene**.

An equilateral triangle has three equal sides. It also has three equal angles. The three angles of an equilateral triangle are each 60° . They add up to 180° .

The second kind of triangle is an isosceles triangle. An isosceles triangle has two sides that are equal, and one that is different. It also has two angles that have the same measurement. The third angle is different. The three angles add up to 180° .

The last kind of triangle is a scalene triangle. A scalene triangle has three sides that are different lengths, and three angles that have different measurements. However, the three angles still add up to 180° .

Triangles get a second name based on the kind of angles they have inside. Sometimes, all the angles are small. If they are all less than 90° , the triangle is called an acute triangle. If it has one right angle (exactly 90°), it is called a right triangle. If it has an angle that is more than 90° , it is called an obtuse triangle. The names can be used together to describe triangles very precisely. For example, you can have a right isosceles triangle. It would have two equal sides, a 90° angle and two 45° angles.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What is the sum of the angles of any triangle?

2) If a triangle has no equal sides and no equal angles, what is it called?

3) How many degrees are in a right angle?

4) What is a triangle called if all the angles and all the sides are equal?

5) In your own words, explain what to look for if you want to classify a triangle.
