

### Skill Check - Homework

Name: \_\_\_\_\_

## “C” Paragraph

*The following passages will be used in this lesson:*

## Magnetism

## What Are Magnets?

**Write an informative essay to present to your class about magnetism. Use information from the passages in your essay.**

*Example Planning:*

## I magnetism

T<sub>1</sub> force

T2 types

$T_3$  everywhere

## C magnetism

a. created

a. permanent

a. convenient

b. poles

b. temporary

b. useful

**Now write the “C” paragraph:**

[illegible]



## Alligators at Risk



**1** There are two species of known alligators in the world, the American alligator and the Chinese alligator. The American alligator can be found in the wetlands of the Southern United States. These reptiles have been hunted for many years and, at one point, were close to extinction. In order to protect this species, they were listed under the Endangered Species Act, making hunting alligators illegal. Due to the efforts of the Endangered Species Act, the species has made a huge recovery and was taken off the endangered species list in 1987. Since the American alligator population has repopulated so well, hunting and egg collecting is once again allowed.

**2** On the other hand, the Chinese alligator is a class one endangered species. The Chinese alligator can be found in the subtropical regions of China in low-lying areas such as rivers, streams, and marshes. This species of alligator is classified as critically endangered because it has a decline in population greater than 80% in specific areas of population. The destruction of their habitats comes largely from the conversion of the lands they inhabit being used for agricultural purposes. The Chinese alligator is very similar to the American alligator in appearance, but they are much smaller.



**What Are Reptiles?**

**3** Snakes, turtles, and lizards are reptiles. These animals are cold-blooded; this means their body temperature depends on their environment and their skin is covered with hard scales that serve as protection for the animal. They have to keep warm by laying in the sun. Since they do not burn too much energy to keep warm, they do not have to eat as much food as mammals or other warm-blooded animals.

**4** Most reptiles lay eggs. Alligators tend to create nests from nearby vegetation to keep their eggs safe. The decomposing vegetation creates the heat needed to keep the eggs incubated. The sex of the baby alligators is determined by the temperature of the nest. If the nest is cooler, it will produce a clutch of female hatchlings, and if the temperature is above 93 degrees Fahrenheit, the eggs will produce male hatchlings.

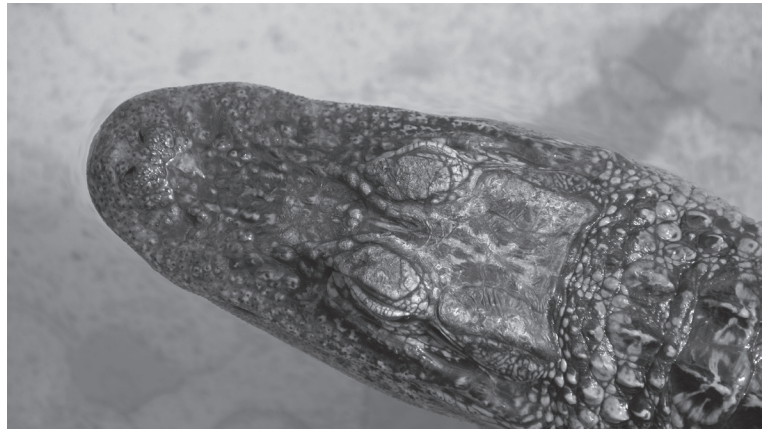
| American Alligator                                                                                                                                                                                                                              | Chinese Alligator                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <p>An average adult American alligator’s weight and length is 790 pounds and 13.1 feet</p> <p>The largest ever recorded, found in Louisiana, measured 19.2 feet</p> <p>Adult alligators are black or dark olive-brown with white undersides</p> | <p>Rarely exceeds 6.9 feet in length and usually weighs less than 100 pounds</p> <p>The body is fully armored, even under its belly</p> |

*“Alligators at Risk” was written for educational purposes.*



## Alligator Habitats

**5** American alligators can be found in freshwater environments like rivers, lakes, ponds, swamps, and marshes. They also like to live in areas that are brackish, which means the water is slightly higher in salt content than fresh water but not salty like seawater. Alligators tend to stay in marshy areas during the breeding season. The wetlands make nest building much easier for the alligators and keep the temperatures of the nests ideal for incubating their eggs.



**6** Adult American alligators create holes in their swamp habitats. They construct these alligator holes by using their feet, tail, and snout. These holes create areas that help the alligator stay cool during hot weather. Alligator holes also provide habitats for other animals during droughts.



**7** Other animals found in these types of habitats are amphibians, shellfish, bears, and panthers. The types of animals found in these habitats depends on whether the swamp is a freshwater swamp or a saltwater swamp. These animals make this their home since they are able to live in low-oxygenated, slow-moving waters.

**8** Many species of mammals, birds, reptiles, amphibians, and fish live and do well in swamp ecosystems. These swamp areas are important because many fish and amphibians lay their eggs in the nearby dry

areas. When the eggs hatch, the young crawl into the water.



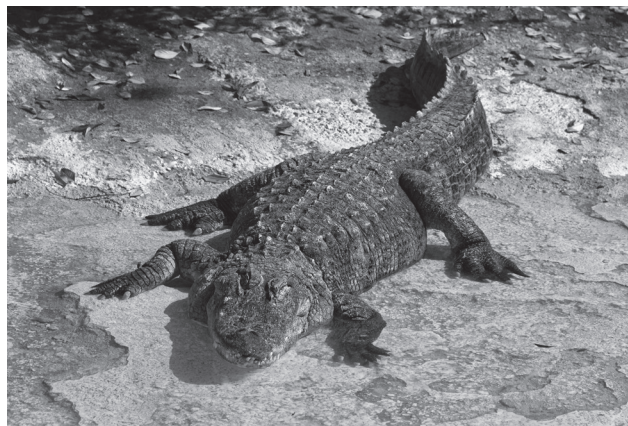
## Types of Reptiles Found in the Everglades

**9** The Everglades National Park in Florida is a freshwater swamp and is home to hundreds of types of birds, many species of reptiles, the Florida black bear, and the Florida panther. Both the American crocodile and the American alligator coexist in the Everglades swamp. Florida weather makes this an ideal habitat for the alligator, as well as many other animals.

**10 Turtles:** The most common turtles found in a swamp-like habitat are the striped mud turtle commonly found along trails, the Peninsula Cooter often found in shark valley, and the Florida red-belly found in freshwater marshes.

**11 Snakes:** Most of the snakes found in the Everglades National Park are adapted to living in water. The striped crayfish snake is the best swimming snake in Florida, but

is not easy to spot since they spend their time in marsh plants. The brown water snake is seen often in plain view and sometimes mistaken for the poisonous Florida cottonmouth.



### **12 Amphibians:**

Amphibians are animals that spend the early part of their life in water using gills to breathe. They grow into adults that may live in water but use lungs for breathing. These include frogs, toads, and salamanders. Most

commonly seen in the Florida Everglades is the grass frog which is the tiniest frog in North America, the pig frog whose grunt-like call can be heard day or night, and the dwarf siren salamander.

**13** All of these reptiles have an important role to play in the habitat they live in.

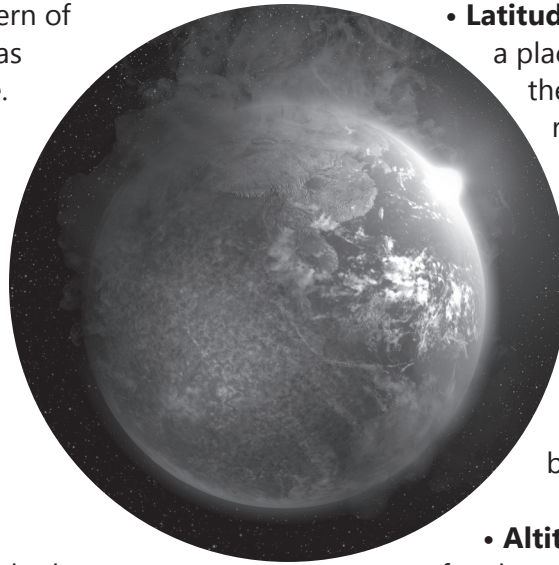
*"Alligator Habitats" was written for educational purposes.*



(Source 1)

## Climates: An Introduction

**1** Climate is the pattern of weather a specific place has over a long period of time. People who study climate are called climatologists. What do these scientists look for when they study a **region's**<sup>1</sup> climate? Some of the things they measure include average rainfall, sunshine, winds, and temperature for the region.



- **Latitude:** This is the distance of a place north or south from the **equator**<sup>2</sup>. The closer a region is to the equator, the hotter it is throughout the year. The farther away it is, the colder it is. In regions closer to the equator, the summers are longer and hotter. As you approach the poles, the colder the winters become.

**2** Climatologists also look at how each weather condition changes from month-to-month and year-to-year in a given region. For example, they look for patterns in the weather to determine if there are cold and hot seasons in the region, or if the temperatures stay pretty much the same all year long.

- **Altitude:** This is the height of a place above sea level. Higher elevations are usually colder than lower elevations.

**3** Keeping track of climates is a very important task, and there are five big factors that can make climates vary from place to place.

- **Distance from Oceans and Large Lakes:** Large bodies of water such as oceans and lakes rise and drop in temperature more slowly than land. Due to this, areas near large bodies of water have milder winters and cooler summers. Water also warms or cools the air on the surface and helps to keep temperatures comfortable.

<sup>1</sup> region – any large part of the Earth's surface

<sup>2</sup> equator – an imaginary line around the middle of the Earth, halfway between the North and South Poles



- **Mountain Ranges:** Air cannot pass through mountains. Instead, it rises and cools as it travels up the side of a mountain. The cool air causes water in the air to become cold. Then, the water falls as rain. All of the rain stays on the same side of the mountain causing the other side of the mountain to be dry and even become a desert.
- **Wind:** Several major belts of wind blow around the earth. They blow from different directions. As they do, they distribute cool air, heat, and moisture to different parts of the world.

4 The world is divided into different climate zones based on similar weather patterns. The weather patterns in a climate zone affect the types of **vegetation**<sup>3</sup> and animals found there. For example, roses could never survive at the South Pole, which is covered in ice. It is too cold there, and penguins could never survive in a region with an **arid**<sup>4</sup> climate. These climate zones tend to have similar animals and vegetation.

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<sup>3</sup> vegetation – plant life

<sup>4</sup> arid – having little or no rain; too dry or barren to support vegetation



(Source 2)

## Climate Zones



**5** The Earth's surface is made up of many different climates. Climatologists (scientists who study climates) have organized the climates by grouping similar ones. Each region is grouped by similar kinds of vegetation, temperature, and **precipitation**<sup>5</sup>. Here's a look at some of the major groups.

### Tropical Climates

**6** Near the equator is the tropical climate zone. Tropical climates get a lot of sunlight and are very warm. Some places often experience heavy rainfall, making this zone very wet and humid. This climate zone makes it perfect for rainforests. Hot and muggy conditions provide an ideal **habitat**<sup>6</sup> for several types of plants and animal species, such as insects like butterflies and beetles, reptiles, amphibians, birds, and mammals.

<sup>5</sup> precipitation – moisture in the form of rain, snow, sleet, ice or hail

<sup>6</sup> habitat – the place where an animal or plant naturally grows



## Dry or Desert Climates

**7** Zones with dry climates receive very little rain. Usually, the average rainfall for an entire year is less than 10 inches. Sometimes it is so hot in a desert that when rain does fall, it can evaporate even before it reaches the ground. Hot deserts often receive a lot of sunlight because there are very few clouds or trees to filter the sun's rays; however, at night deserts can be extremely cold. Very little plant life survives in the desert. Cacti are one exception. The cactus plant has **evolved**<sup>7</sup> so that it stores water during periods of **drought**<sup>8</sup>. The stem of the cactus stores water and allows very little to leave the plant. Some famous deserts include the Sahara in northern Africa and the Mojave in the United States.

## Moderate Climates

**8** Areas with moderate or temperate climates have winters that are cool and dry and summers that are warm and wet. Neither season in this zone has very hot or very cold temperatures. There are many plants and animal species that do very well in these climates. Most of the United States falls into this climate zone.

## Polar Climates

**9** Have you ever heard of the polar ice caps? The ice caps are found at the North and South Pole and are always covered in ice or snow. They are the places with the coldest climates on Earth. These places get less of the sun's direct warmth because of the tilt of Earth's axis causing it to be dark for six months out of the year. Temperatures are extremely low during winter. Precipitation is rare and almost always in the form of snow.

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<sup>7</sup> evolved – to gradually develop characteristics that will help a species survive in an environment

<sup>8</sup> drought – a prolonged period of abnormally low rainfall; a shortage of water resulting from this



## Magnetism



**1** Magnets come in many sizes and are very **diverse**<sup>1</sup>. The most commonly seen magnets are in the shapes of bars or disks. Because they stick to certain metals, they are used to fasten and latch things, like a cabinet door. Horseshoe magnets have a U shape. They are used to move iron and steel scraps.

**2** Magnets are everywhere. They help to make life more **convenient**<sup>2</sup>. For example, you may have seen your teacher using magnets to help keep important papers upon his/her whiteboard. You may also have magnets on your refrigerator door at home keeping doctor appointments visible. You may also have seen them attached to the back of cars in the shapes of ribbons.

**3** Many electrical motors also use magnets. They require the help of electromagnets to run. The force that runs the motor is created by a magnet sending an electrical current through a coil of wire. Motors with electromagnets help run household appliances such as washing machines and dishwashers. The same electromagnetic force is also used in the motors of cars, trains, and airplanes.

**4** Magnets are so useful that they're even being used in the healthcare field. Huge magnets in a special machine can give doctors a **detailed**<sup>3</sup> view of what is inside your body. The doctors use these pictures to find and treat whatever is wrong without having to make an **incision**<sup>4</sup>. The use of the machine is also more cost effective for the patient.

**5** The use of magnets only continues to grow as new inventions are made. In Japan, magnets are being used in some remarkable new ways. For example, Japan now has a train that runs on magnets. It just hovers over the tracks. The magnetic force created between the train and the tracks allows the train to ride smoother and faster.

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<sup>1</sup> diverse – very different

<sup>2</sup> convenient – proceeding with little effort or difficulty

<sup>3</sup> detailed – having many details or facts, showing attention to detail

<sup>4</sup> incision – a surgical cut made in the skin or flesh

*"Magnetism" was written for educational purposes.*



## What Are Magnets?



**6** Have you ever wondered how a magnet works? What makes metal objects attract to a magnet and why do magnets repel each other? The answer is magnetism.

**7** The official definition of magnetism is “a physical phenomenon produced by the motion of electric charge, resulting in attractive and repulsive forces between objects.” In other words, magnetism is a force that can pull together or push away objects. All magnets have a north pole and a south

pole. If different poles of two magnets are placed close to each other they will attract, but same poles will repel.

**8** When it comes to magnets, opposites attract. Each magnet has a north pole and south pole, and only the opposite ends of magnets will attract other magnets. Placing the ends north to north or south to south will result in **repulsion**<sup>5</sup>.

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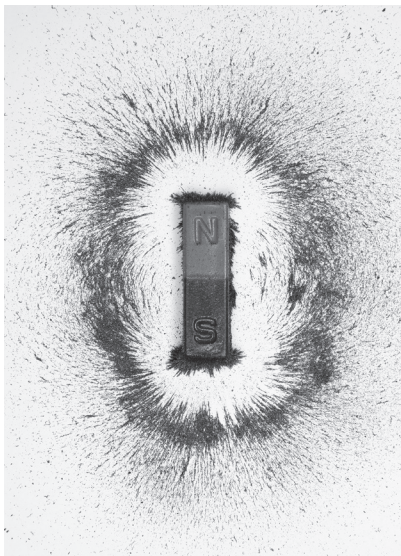
<sup>5</sup> repulsion – to move away from each other



## Types of Magnets

**9 Permanent Magnets** are the most commonly seen magnets. These are the ones we find hanging onto our refrigerator doors. They are said to be permanent because once they are magnetized, they maintain their magnetism.

**10 Temporary Magnets** are those objects that act like a permanent magnet when they are near a magnetic field. During this time they are charged and will be attracted to another magnet. An example of a temporary magnet would be paper clips, nails, and other soft metal objects. These objects are considered to be magnetized for a short time making them a temporary magnet.



**11 Electromagnets** are a temporary magnet made by coiling wire around an iron core; when current flows in the coil the iron becomes a magnet. The main advantage of an electromagnet is that the magnetic field can be changed by controlling the amount of electric current flowing through it. However, unlike a permanent magnet that needs no power, an electromagnet requires a continuous supply of current to maintain the magnetic field. Examples of electromagnets are generators, blenders, washing machines, and other household appliances.

*"What are Magnets?" was written for educational purposes.*