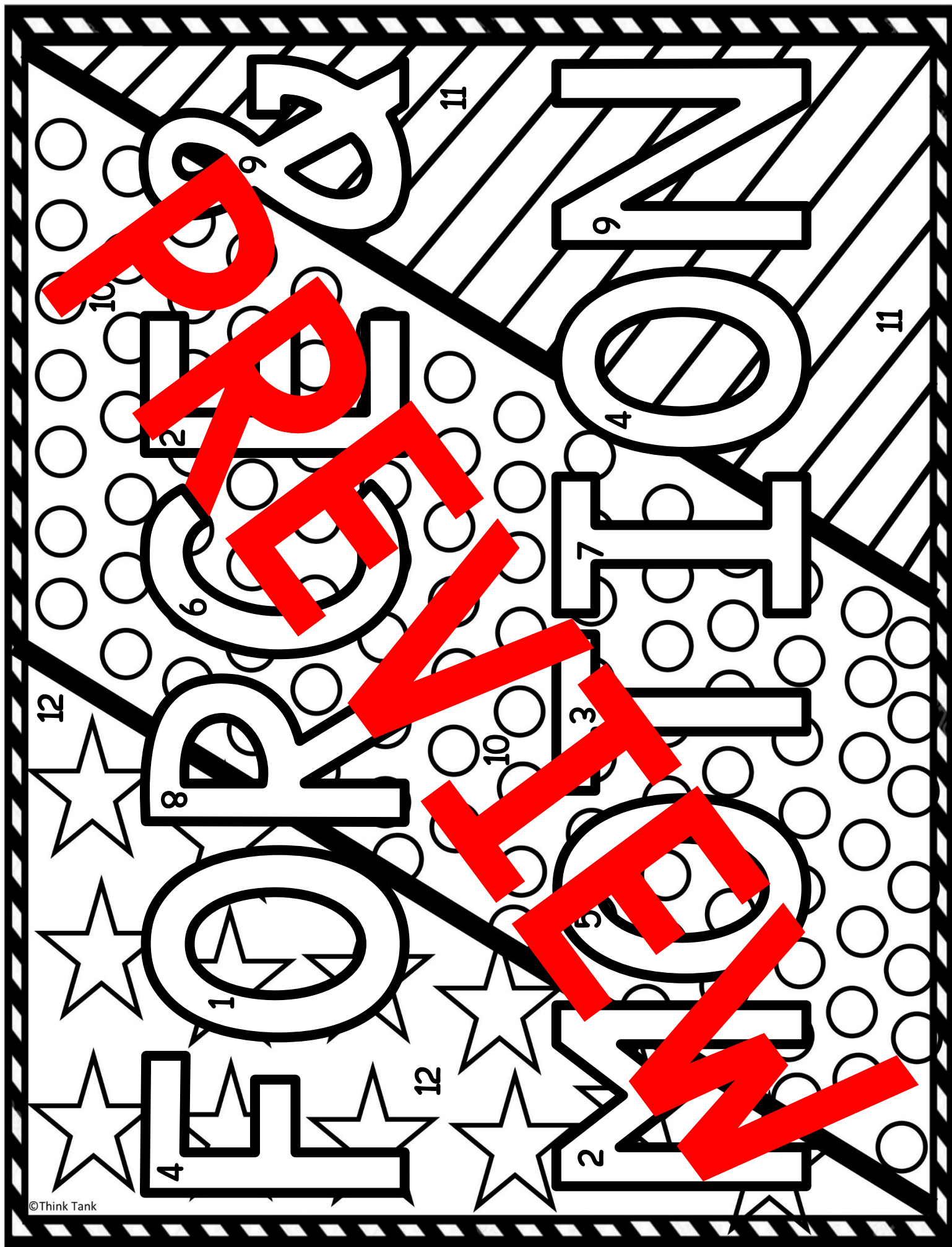




FORCE AND MOTION ANTICIPATION GUIDE

Read each statement and decide if it is True or False. Complete the left column before the reading by circling the T for True or the F for False. Complete the right column after you finish the reading. Did any of your answers change?

BEFORE READING		STATEMENT	AFTER READING	
T	F	Force is movement in any direction.	T	F
T	F	Newton's first name was Neil.	T	F
T	F	A suspension bridge is an example of spring force.	T	F
T	F	Pushing a book is an example of contact force.	T	F
T	F	There must be force to move something.	T	F
T	F	Field forces connect two objects that do not connect.	T	F
T	F	Tension is when two objects pull against each other.	T	F
T	F	Mass is the amount of matter in something.	T	F
T	F	Force is the push or pull on an object.	T	F

DID YOU KNOW?

Mechanics is the study of the motion of objects under the action of forces.

Force and Motion

Name: _____

Answer the questions below. Then on the coloring page, color each numbered section with the corresponding color. If there is any space left over, color it your choice! Follow the directions provided to cite evidence from the reading.

Questions	Text Evidence	Answer
#1 What is the word for when you travel and move?	Find proof in the reading and <u>UNDERLINE</u> it in PURPLE	Locomotion PURPLE STRIPES
#2 How many different kinds of forces are there?	Find proof in the reading and <u>CIRCLE</u> it in GREEN	Two PURPLE STRIPES
#3 Newton developed how many laws of motion?	Find proof in the reading and <u>BOX</u> it in RED	Nine YELLOW
#4 What measures the force to move objects?	Find proof in the reading and <u>BOX</u> it in YELLOW	Three ORANGE
#5 How many different kinds of forces are there?	Find proof in the reading and <u>CIRCLE</u> it in ORANGE	Isaacs ORANGE
#6 How many different kinds of forces are there?	Find proof in the reading and <u>UNDERLINE</u> it in PURPLE	Potential BROWN
		Six GREEN STRIPES

FORCE AND MOTION

Why does a ball drop when you let go of it? Why doesn't a top spin forever? These great questions deal with the laws of motion and force. Motion is movement in any direction, including forwards, backwards, up, down, sideways, and in circles. You can travel and move, which is called locomotion. Examples of locomotion include gallop, walk, skip, leap, etc. You can always stay in place and move called axial movement. Axial movement examples are bend, twist, pivot, turn, etc. Other examples of movement occur with objects. For instance, waterfalls and guitar strings move.

The amount of force to move something. Force is the push or pull of an object. For example, moving a wheelbarrow, lawnmower, snow blower, someone on a swing, or a hammer are examples of push. Pulling examples include a horse pulling a carriage, pulling leaves, and opening a door or curtain.

Forces can be small or large to make something move, speed up, slow down, change direction, stop an object, or change shape. The amount of force needed to affect something varies. Imagine you had a box filled with feathers and a box filled with rocks. Which box would be easier to push, carry, or pull? The box with feathers would be easier because its mass is smaller. Mass, measured in kilograms (kg), is the amount of matter in something. Rocks have more mass than feathers.

What happens if you have two identical wagons filled with mulch. An adult pulls one wagon, and an 8-year-old pulls the other. Which person would have more success? The adult would have more success and ease pulling the wagon. Why? Because the adult has more power, the speed at which something will move. An adult pulling the wagon has more power, energy, and force than an 8-year-old.

How do you stop or slow down a heavier or faster moving object? How does that compare with stopping or slowing down a lighter or slower-moving item? More force is required to stop or slow down the heavy and fast object.

There are two kinds of forces: contact force and non-contact force. Contact force occurs when two objects connect. Examples of contact forces include:

- Kicking a ball.
- Sanding wood (sandpaper on wood).
- Stretching a spring.