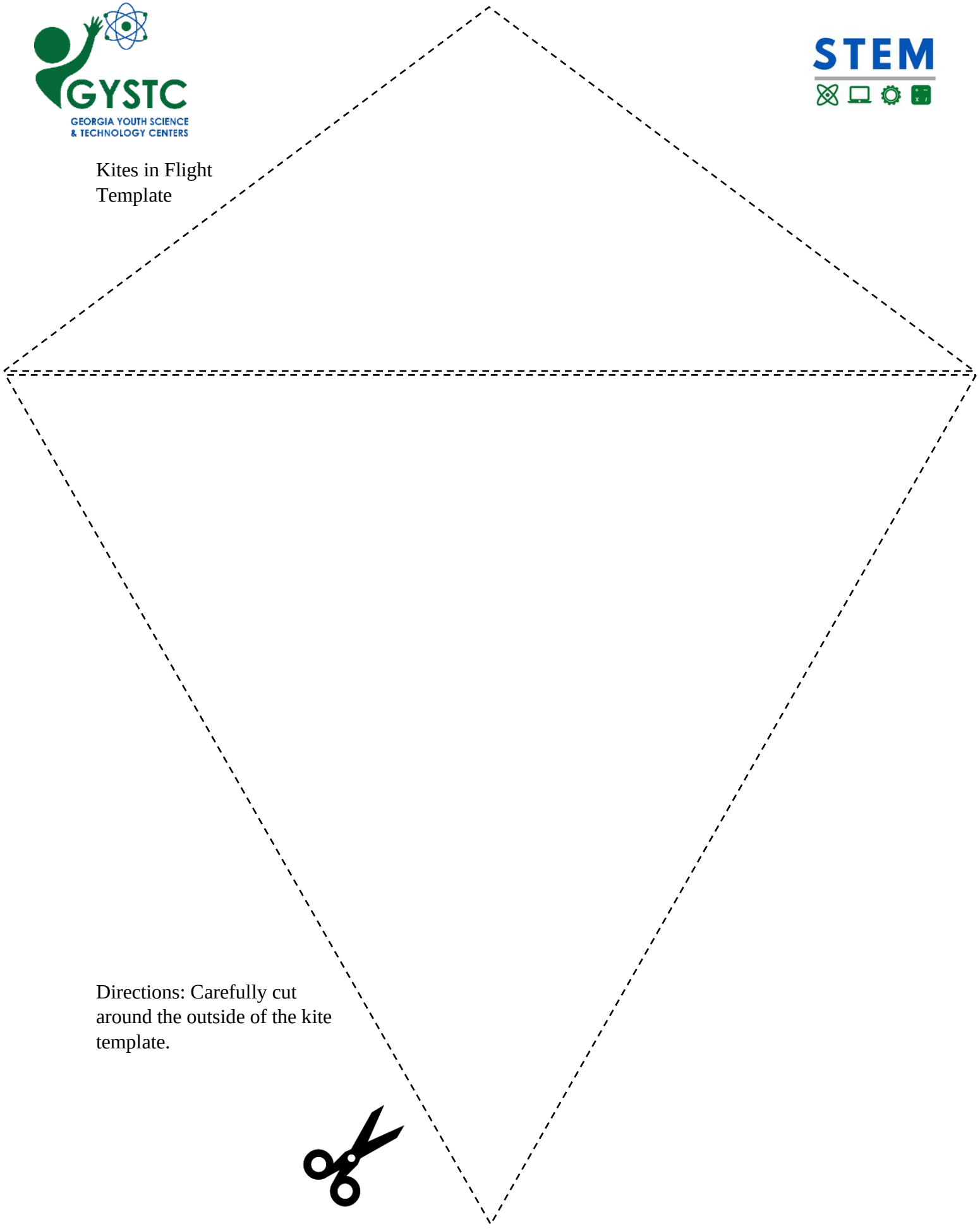
Kites in Flight

Simple STEM Activity

Purpose:	The purpose of this activity is to construct and fly a diamond kite.
Standard(s):	**S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.** a. Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results. b. Construct an argument to support the claim that gravitational force affects the motion of an object.
Materials:	Kite template, scissors, 2 10-inch non-flexible straws, tape, ruler, ribbon (12 feet), string or yarn (25-30 feet), unsharpened pencil, crayons, or colored pencils (optional)
Procedures:	1. Using scissors, carefully cut out the kite template. 2. Place one of the straws vertically on the kite template and tape it down at both ends. 3. Using your ruler, measure two inches on the other straw and trim it off. 4. Place the shorter straw horizontally on the kite template and tape it down at the ends. 5. Attach 12 feet of ribbon to the bottom of the kite as a tail by tying a double knot. 6. Measure and cut between 24-30 feet of string or yarn. Double-knot one end around where the two straws form a t-shape. Double knot the other end around an unsharpened pencil. 7. Roll the excess string around the pencil until there are 3-4 feet left. 8. Decorate your kite (optional). 9. Test your kite on a windy day.
Science Behind It:	Kites have been around for over 2,000 years. They have been used for celebrations, meteorology, aeronautics, wireless communication, photography, and most commonly as toys. Kites must be lightweight, but strong to survive powerful winds while in flight. They usually have a wood or plastic frame with a paper, plastic, or cloth "skin." Some kites can even do stunts. Like airplanes, kites are affected by wind and the four forces of flight: gravity, lift, drag, and thrust. Kites can overcome the force of gravity while in flight. The air pressure increases as the wind hits the front of

	the kite and travels around its sides. This continues down the kite's back to create a low-pressure area just above the kite. When this wind hits the front of the kite, it's deflected downward, and this force in the opposite direction pushes the kite upward. That is why it is very difficult to fly a kite without any wind.
Questions to Ask:	• How do kites fly?

Kites in Flight
Template



Directions: Carefully cut around the outside of the kite template.