2.3 Dilations Reading Guide   Name: _____
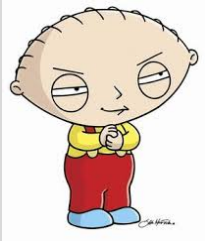
Directions: Take turns reading.

Task Manager: We are studying a new topic. We are learning about shapes. In particular, we are going to learn about making shapes bigger and smaller. This math process is called **dilation.**

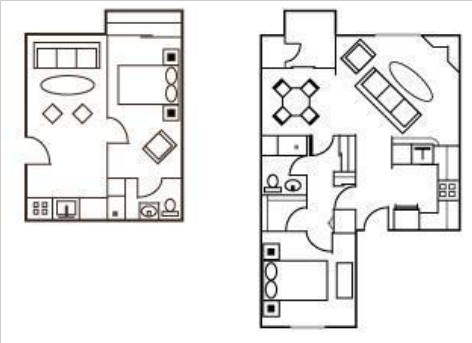| smaller		bigger	

Stewie   Boy

Group Manager: Many different jobs make things bigger and smaller. For example, artists have to make people very small. Usually artists need to make very small pictures for books or magazines. Sometimes artists want to make the people look **realistic**. A picture is **realistic** if it looks like a real person.

1. Communication Manager: Which picture is more realistic - Stewie or boy? Why?	2. Resource Manager: What is the math process of making shapes bigger and smaller called?
I think ___ is more realistic because…	

Task Manager: Another example of a job that makes shapes bigger and smaller is **Architects**. Architects design and build buildings. Architects make drawings of buildings that are very small.

Group Manager: These pictures are called **floor plans**. They have to show all the furniture and the walls and doors so that people can imagine the building.

Communication Manager: Shapes have different **characteristics**. Some characteristics of shapes are: angles, sides, area, perimeter, color, dimensions (2D, 3D). When the shape gets bigger or smaller, some of these characteristics change. Some stay the same.

3. Group Manager: Make a prediction. What characteristics change when the shape gets bigger?	4. Resource Manager: Make a prediction. What characteristics don't change when the shape gets bigger?

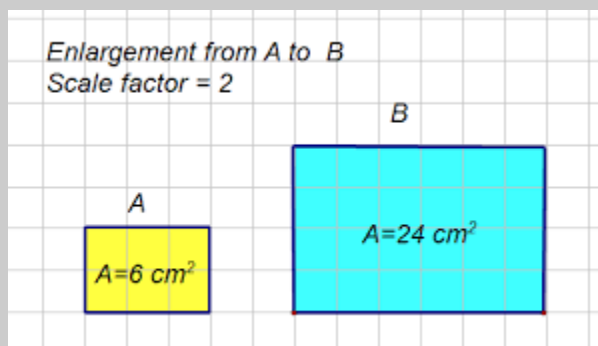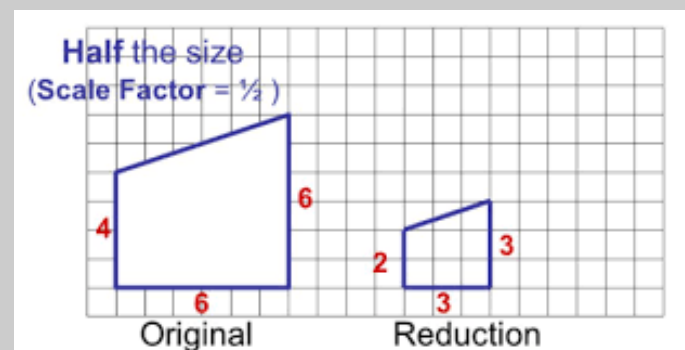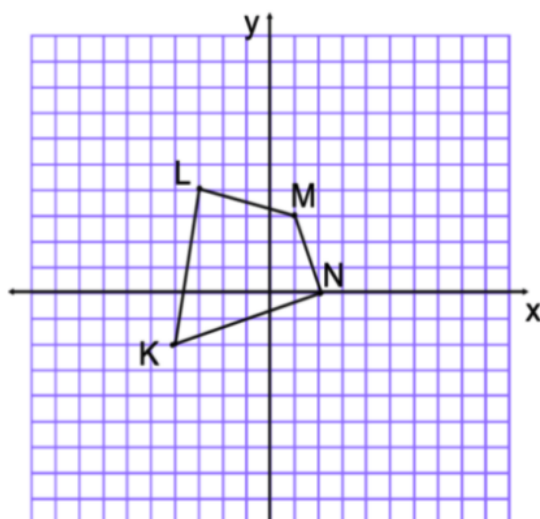| Task Manager: We use a **scale factor** to tell how much bigger or smaller something will be. • If the scale factor is 1 the image stays the same size. • If the scale factor is larger than 1 the image will get bigger. • If the scale factor is between 0 and 1 the image will get smaller.	4. Group Manager: Will the following scale factors make an image bigger or smaller? Scale factor = 1.25 _____ Scale factor = 1/3 _____ Scale factor = 5/4 _____ Scale factor = 0.85 _____
5. Communication Manager: When making a shape bigger, it is called an **enlargement**. For example, in this picture the scale factor is 2 so the shape is an **enlargement**. Enlargement from A to B Scale factor = 2 B A A=24 cm² A=6 cm²	6. Resource Manager: When making a shape smaller, it is called a **reduction**. For example, in this picture the scale factor is ½ so the shape is a **reduction**. Half the size (Scale Factor = ½) 4 ... 6 6 2 ... 3 3 Original Reduction
7. Task Manager: Watch the Video titled "**Dilation Video**" until the "timeout". Then, **dilate** the image LMNK using a scale factor of 2. L ( ) M ( ) N( ) K( ) L'( ) M'( ) N'( ) K'( ) y L M N K x	8. Group Manager: Return to the video and watch the last part. Then, **dilate** the image LMNK using a scale factor of ¾. R( ) Q( ) P( ) S( ) R'( ) Q'( ) P'( ) S'( ) y R Q x P S