$\qquad$ Date: $\qquad$ Class: $\qquad$

## Scaling a Figure Worksheet

Learning Goal: How does a figure or shape change when we enlarge or reduce it?

## Introduction

Below is floor plan for the interior design of a bedroom. Let's look at what happens to the items in the design when we enlarge or reduce them.

## Instructions

1. Measure and record the size and length of each part of the bedroom for the original, enlarged and reduced designs.
2. Calculate the perimeter and area for each design.
3. Answer the questions below.


Reduced


Enlarged
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## Data Collection

1. Record your measurements and calculations for the bedroom in the table below.

| Bedroom | Length | Width | Perimeter | Area | Angles |
| :---: | :--- | :--- | :--- | :--- | :--- |
| Original |  |  |  |  |  |
| Enlarged |  |  |  |  |  |
| Reduced |  |  |  |  |  |

2. Record your measurements and calculations for the door swing (quarter circle) below.

| Door Swing | Radius | Circumference | Area | Angle |
| :---: | :--- | :--- | :--- | :--- |
| Original |  |  |  |  |
| Enlarged |  |  |  |  |
| Reduced |  |  |  |  |

3. Record your measurements and calculations for the TV in the table below.

| TV | Length | Width | Perimeter | Area | Angles |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Original |  |  |  |  |  |
| Enlarged |  |  |  |  |  |
| Reduced |  |  |  |  |  |

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## Questions

Answer the following questions based on your measurements and calculations.

1. By how much was the design enlarged? How do you know? How did that change the perimeter? The area? The angles? Explain.
2. By how much was the design reduced? How do you know? How did that change the perimeter? The area? The angles? Explain.
3. If we were to draw a new design at quadruple (four) times the size, how would the perimeter change? How would the area change? The angles? Explain
4. Which characteristics of a figure change when the original is scaled? How can you predict their new size? Which characteristics stay the same? Explain.
