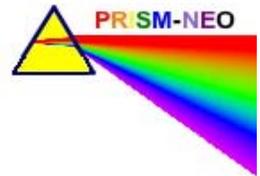


# Dilatations - what a stretch!

<---Sketch Title



**Sketch Filename:**

**Movie Filename:**

**Math Concept(s)**

**Suggested Grades**

**Sketchpad Level**

Transformations  
Dilatations

7  
 8  
 9 Applied

Easy  
- drag points and click buttons

Beginner  
Intermediate  
Experienced

## Learning Goals:

- Investigate the properties of dilatations
- Create designs using dilatations

## “Sketchy” Description:

- a demonstration of the effect of dilatations
- the use of a Frayer model for building vocabulary
- investigation of properties of dilatations including angles, sides and parallelism
- link to website for extension activities
- a self-checking practice page for practicing dilatations

## Lesson Plan Suggestions

- description of how the sketch might be used in each of the three lesson parts - *Minds On, Action!, Consolidate.*
- includes student groupings, instructional strategies, and connections to manipulatives or other technologies.

**Minds On** - Students explore “Similar Figures vs Congruent Figures” sketch

- Teacher demonstrates the “Dilatation Demonstration” sketch as a whole class activity or students work in pairs to view sketch. Provide students with a printed copy (or onscreen) of Frayer model for “Dilatations”. Students are to brainstorm in pairs, their ideas to complete the Frayer model. These ideas can be used to create associated words for a word wall (e.g., enlargement)
- Use “similar” shapes and “congruent” shapes with whole class and discuss their ideas of which ones represent dilatations and which do not.

**Action!** - Individually, in pairs, or in small groups students can navigate through pages “Investigating Properties of a Dilatation”, “The Center of Dilatation”, and “The Dilatation Factor”. As they go through the pages, have them record all responses to questions in their journals. Discussion should be based on these responses in whole class or group. They should also record the facts from the summary page.

**Consolidate** - Revisit Frayer model to add or change definitions

- Students will complete a practice page

## Extensions:

- Explore dilatations as students create an art piece on paper or in a sketch
- The sketch contains a link to a website which interactively investigates dilatations
- Using a printout of a polygon template, students can cut out polygons and use a light source to project a dilated image on a wall. Dilatation properties can be investigated.

## Questions or activities for students/parents to explore together:

1. What are the properties of dilatations?
2. What are the differences between congruent shapes and similar shapes? Draw shapes to show the differences.
3. Explain what happens to an original figure if you dilate it using a dilatation factor of 2? of 0.75?
4. How would you explain to another student the definition of a dilatation?