**5E Lesson Plan**

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| **Standard Addressed:** **CC.2.3.8.A.2****Understand and apply congruence, similarity, and geometric transformations using various tools.****CC.2.1.6.D.1****Understand ratio concepts and use ratio reasoning to solve problems.****CC.2.1.6.E.3****Develop and/or apply number theory concepts to find common factors and multiples.****Lesson Name:** Scale Factors |
| **Author:** Ryan Mulville  |
| **Subject area / grade level:** Math / 7th and 8th graders |
| **Time:** 75 minutes |
| **Materials:** * Means to show the trailer for “Downsizing”
* Similar shape worksheet
* “Candy Bar” activity worksheet
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| **Lesson objective(s): Students Will Be Able To…**1. Use scale factors to enlarge or dilate a shape.
2. Interpret a scenario to find the scale factor and use this information to find other information
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| **What will the Teacher be Doing** | **Elicit Questions** | **What are the Students Doing** |
| **ENGAGEMENT** |
| * Show the trailer for the movie “Downsizing”.
* Ask elicit questions to develop the students’ understandings of scale factors.
 | * Can someone tell me the premise of the movie?
* How can this premise be related to math?
* Are all the people shrunk to the same size? If me and a student were shrunk, would the height difference still be there?
* If they aren’t the same size, how did they determine how small to shrink people?
 | * Answering the elicit questions
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| **EXPLORATION** |
| * Handout worksheet with similar geometric shapes to pairs of students
* Instruct students to answer the questions and use what was learned from the trailer
 |  | * Working with their partner to answer the questions and figure out the scale factor of the problem.
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| **EXPLANATION** |
| * Have student pairs explain their answer, how they came up with the answer, and what the scale factor is for each problem.
* Address any misconceptions the students might have.
 |  | * Presenting their solutions to the problems on the worksheet
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| **ELABORATION** |
| * Instruct the students to complete the “Candy Bar” activity.
* Here, students will not only use scale factors to change the size of a candy bar, but also to figure out the new nutritional information for the candy bar.
 | * So we have used scale factors to enlarge or shrink some sort of shape or person, but scale factors be used to do other stuff?
* Are the candy bars going to have the same nutritional values?
 | * Use scale factors to change the size of a candy bar,
* In addition, they will extend their knowledge of scale factors to calculate the nutritional value of the bigger candy bar.
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| **EVALUATION*** Submission of their “Candy Bar” worksheet activity
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