# Geometry Unit 3: Similarity
# Lessons 1–5: Properties of Dilations

## Explore, Play, and Discuss

- I can dilate a figure given a scale factor and center.

**Activity Suggestions:** Students respond to questions in an online or paper journal, or talk them over with someone at home.

- ➢ Lesson 1: Consider recording 1.2 as a worked example for students to watch.
- ➢ Activity 3.1

**Assessment Suggestions:**

- ➢ Check Your Readiness assessment: Administer all 6 items within the first day or two of this section. Use the guidance provided with each problem to adjust instruction so that students can access the math in the unit.
- ➢ Lesson 1 cool-down

## Deep Dive

- I know that when figures are dilated by a scale factor of *k*, all lengths in the figure are multiplied by *k.*
- I can explain what happens to lines and angles in a dilation.

**Activity Suggestions:**

- ➢ Lesson 3: Sync discussion.
  - Incorporate 8.2.5.1 to consolidate and synthesize discussion
- ➢ Activity 4.3: Sync discussion. Incorporate questions that get at focus of 4.1and 4.2 into discussion.

**Assessment Suggestions:**

- ➢ Lesson 3 cool-down
- ➢ Lesson 4 cool-down

## Synthesize and Apply

- I can explain why the segment connecting the midpoints of two sides of a triangle is parallel to the third side and half the length of the third side.

**Activity Suggestions:** Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home.

- ➢ Activity 4.1: Opportunity for students to reflect on one aspect of Deep Dive conversation.
- ➢ Lesson 5

**Assessment Suggestions:**

- ➢ Lesson 5 cool-down
- ➢ Revisions to previous assessment prompt, consider using Math Language Routine1: Stronger and Clearer Each Time
- ➢ Students use learning targets to decide what additional practice they need.

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| Ongoing Practice | |
|---|---|
| | • Assign one or more of the distributed practice problem sets from Lessons 1–5 to be completed over the time period that the section is being worked on.<br>• These could also be lagging, so that students are working on practice problems from the previous section or unit during this section or unit.<br>• Specify which problems students should submit, or let them choose based on reflecting on learning targets. |

| Anytime Resources | |
|---|---|
| | • Delve into one of the culminating lessons from Unit 1 or 2.<br>• Delve into any of the Modeling Prompts 1–5.<br>• Teach and encourage students to study the lesson summaries (at the end of every lesson) and refer back to them.<br>• Emphasize the Are You Ready for More opportunities to students who want to explore the topics in more depth. |

## Lessons 6–12: Similarity Transformations & Proportional Reasoning

| Explore, Play, and Discuss | | |
|---|---|---|
| | • I can write similarity statements.<br>• I know the definition of similarity.<br>• I can critique proofs that use similarity. (Building towards this, as it is connected to Activity 8.1) | |
| | **Activity Suggestions:** Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home.<br>➢ Lesson 6<br>○ Activity 6.2: Virtual card sort<br>○ 8.2.6.4<br>➢ Activity 8.1 | **Assessment Suggestions:**<br>➢ Lesson 6 cool-down |

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| Dive Deep | |
|---|---|
| • I can explain why the Angle-Angle Triangle Similarity Theorem works. | |
| **Activity Suggestions:**<br>➢ Lesson 9: Sync discussion<br>➢ Activity 7.2: Sync discussion | **Assessment Suggestions:**<br>➢ Lesson 9 cool-down |

| Explore, Play, and Discuss | |
|---|---|
| • I can critique proofs that use similarity.<br>• I can write proofs using the definition of similarity. | |
| **Activity Suggestions:** Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home.<br>➢ Activity 8.2, 8.3<br>➢ Activity 7.1<br>➢ Activity 10.1 | **Assessment Suggestions:**<br>➢ Lesson 8 cool-down<br>➢ Lesson 7 cool-down |

| Dive Deep | |
|---|---|
| • I can explain why a segment parallel to one side of a triangle divides the other sides proportionally.<br>• I can find scale factors and use them to solve problems. | |
| **Activity Suggestions:**<br>➢ Lesson 11. Sync discussion.<br>➢ Lesson 12 Practice Problem 2. Sync discussion to get Pythagorean Theorem in the room in preparation for the next cycle of EDA. | **Assessment Suggestions:**<br>➢ Lesson 11 cool-down |

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## Synthesize and Apply

- I can find scale factors and use them to solve problems.

**Activity Suggestions:**

- ➢ Lesson 12
- ➢ Teacher selects some student work from the week and use one of the following routines:
  - Math Language Routine 3: Clarify, Critique, Correct
  - Math Language Routine 7: Compare and Connect

**Assessment Suggestions:**

- ➢ Lesson 12 cool-down
- ➢ Students use learning targets to decide what additional practice they need.

## Ongoing Practice

- Assign one or more of the distributed practice problem sets from Lessons 6–12 to be completed over the time period that the section is being worked on.
- These could also be lagging, so that students are working on practice problems from the previous section or unit during this section or unit.
- Specify which problems students should submit, or let them choose based on reflecting on learning targets.

## Anytime Resources

- Delve into one of the culminating lessons from Unit 1 or 2.
- Delve into any of the Modeling Prompts 1–6.
- Teach and encourage students to study the lesson summaries (at the end of every lesson) and refer back to them.
- Emphasize the Are You Ready for More opportunities to students who want to explore the topics in more depth.

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# Lessons 13–16: Similarity in Right Triangles

**Explore, Play, and Discuss**

- I can find similar triangles formed by the altitude to the hypotenuse in a right triangle.

| **Activity Suggestions:** Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home.<br>➢ Lesson 13<br>➢ Activity 14.1 | **Assessment Suggestions:**<br>➢ Lesson 13 cool-down |
|---|---|

**Dive Deep**

- I can prove the Pythagorean Theorem
- I can solve and interpret problems involving similar right triangles.

| **Activity Suggestions:**<br>➢ Activity 14.2: Sync discussion.<br>➢ Activity 14.3: Sync discussion.<br>➢ Activity 16.1: Sync discussion.<br>➢ Activity 16.2: Sync discussion. | **Assessment Suggestions:**<br>➢ Lesson 14 cool-down<br>➢ Lesson 16 cool-down |
|---|---|

**Synthesize and Apply**

- I can solve problems involving similar right triangles.

| **Activity Suggestions:** Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home.<br>➢ Lesson 15<br>○ Adapt Activity 15.2 if possible.<br>➢ Encourage students to study the lesson summaries (at the end of every lesson) that aligned to their reflection on the learning targets for the section/unit. | **Assessment Suggestions:**<br>➢ Lesson 15 cool-down<br>➢ Students use learning targets to decide what additional practice they need. |
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| Ongoing Practice | |
|---|---|
| | • Assign one or more of the distributed practice problem sets from Lessons 13–16 to be completed over the time period that the section is being worked on.<br>• These could also be lagging, so that students are working on practice problems from the previous section or unit during this section or unit.<br>• Specify which problems students should submit, or let them choose based on reflecting on learning targets. |

| Anytime Resources | |
|---|---|
| | • Delve into one of the culminating lessons from Unit 1 or 2.<br>• Delve into any of the Modeling Prompts 1–6.<br>• Teach and encourage students to study the lesson summaries (at the end of every lesson) and refer back to them.<br>• Emphasize the Are You Ready for More opportunities to students who want to explore the topics in more depth. |

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