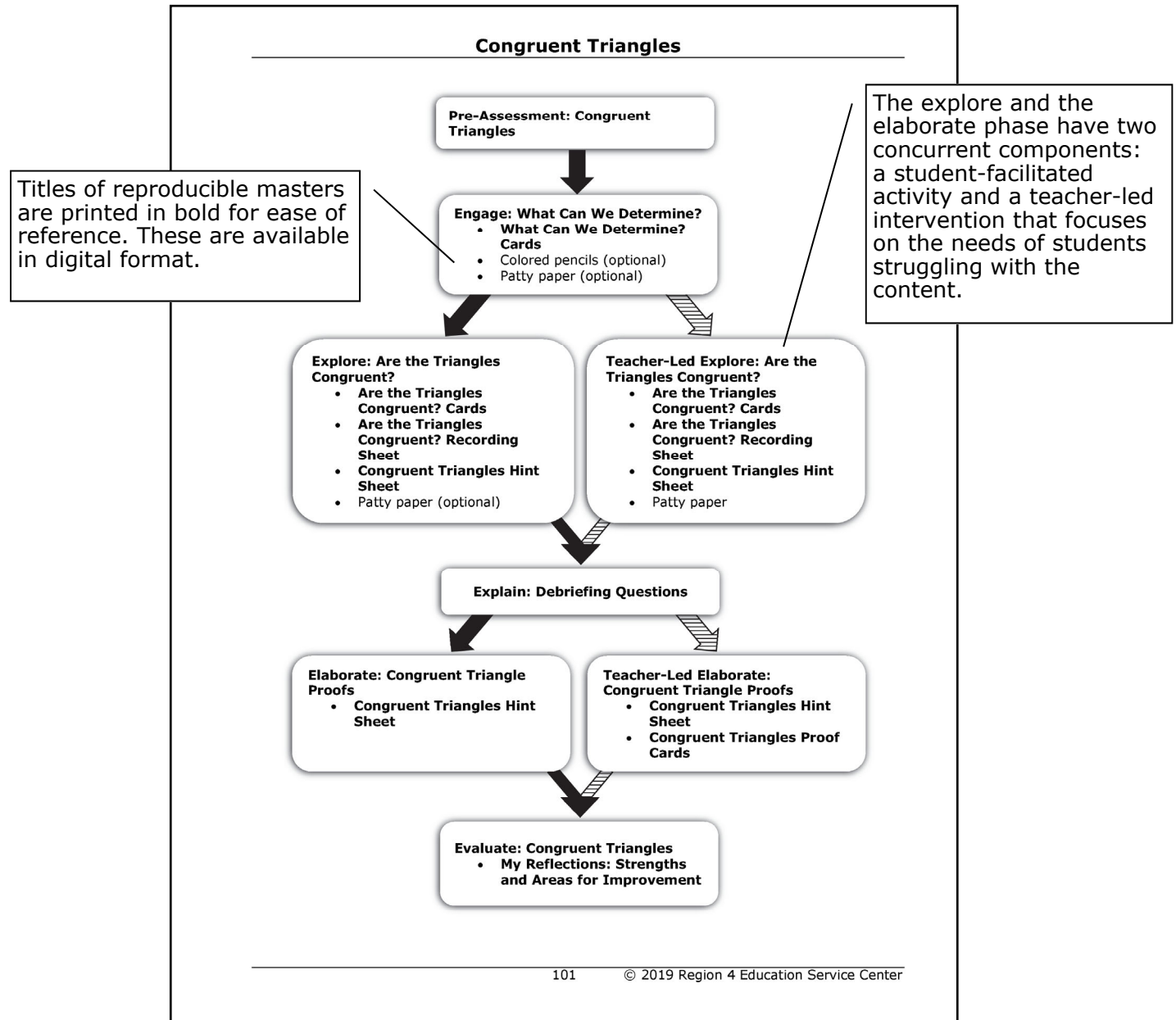


## What is in a lesson found in *Closing the Distance*?



## What is in a lesson found in *Closing the Distance*?

Each lesson supports multiple student expectations with a focus on the STAAR® readiness standards. Student expectations are listed at the

Materials for each phase are summarized on one page for ease in preparation.

### Congruent Triangles

Phase	Activity Title	TEKS	Additional Materials	Instructional Grouping
Pre-Assessment	<b>Pre-Assessment: Congruent Triangles</b>	G(6)(A) G(6)(B) G(6)(D)		Individual
Engage	<b>What Can We Determine?</b>	G(6)(D)	<ul style="list-style-type: none"> <li>• <b>What Can We Determine? Cards</b> (1 set per group)</li> <li>• Colored pencils (optional)</li> <li>• Patty paper</li> </ul>	Groups of 3 Whole-group
Explore Explain	<b>Are the Triangles Congruent? Recording Sheet</b>	G(6)(A) G(6)(B) G(6)(D)	<ul style="list-style-type: none"> <li>• <b>Congruent Triangles Hint Sheet</b></li> <li>• Highlighters</li> <li>• Patty paper (optional)</li> </ul>	Pairs of students Whole-group
Elaborate	<b>Congruent Triangle Proofs</b>	G(6)(A) G(6)(B)	<ul style="list-style-type: none"> <li>• <b>Congruent Triangles Hint Sheet</b></li> </ul>	Pairs of students
Evaluate	<b>Evaluate: Congruent Triangles</b>	G(6)(A) G(6)(B) G(6)(D)	<ul style="list-style-type: none"> <li>• <b>My Reflections: Strengths and Areas for Improvement</b></li> </ul>	Individual

**Bold items are reproducible masters.**  
*Italicized items require advanced preparation.*

#### **Pre-Assessment: Congruent Triangles**

The purpose of this activity is to formatively assess students' understanding of how to prove triangles are congruent.

The identified activities are recommended for small-group, teacher-led interventions for students who may struggle with the specific content in **Pre-Assessment: Congruent Triangles**.

Content	Teacher-Led Intervention
Identify given information about segments, angles, and triangles from given information.	<b>Are the Triangles Congruent?</b>
Identify which triangle congruence conditions must be present to prove two triangles are congruent.	<b>Congruent Triangle Proofs</b>


Grouping strategies for each phase are summarized to assist in the arrangement of the classroom.

A focused pre-assessment is provided for each lesson. Tier I intervention activities are identified for use with students who may struggle with the identified content.

## What is in a lesson found in *Closing the Distance*?

Additional materials may be needed to complement the student pages.

### Congruent Triangles



#### Engage: What Can We Determine? Cards

The purpose of this activity is to assess background knowledge related to inferring information from given information and markings on figures.

**Additional Directions**


1. Post several sets of the **What Can We Determine? Cards** around the room based on class size.
2. Prompt students to list on their own paper what they can determine based on the given information and figure on a card.
3. Prompt students to share and justify their observations as needed.

**Additional Materials**

- Patty paper (optional)
- Colored pencils (optional)

**Listen For . . .**

- Understanding of information that is provided when a segment is labeled as an altitude, a bisector, or a median of a triangle.
- Connections between parallel lines and angle relationships.
- Understanding of angle relationships formed when parallel and perpendicular lines are crossed by a transversal.
- Connections among the properties of an isosceles triangle and the measures of sides and angles.
- Appropriate use of diagram markings to represent relationships.



#### Explore: Are the Triangles Congruent? Recording Sheet

The purpose of this activity is to reinforce students' understanding of how to determine if two triangles are congruent using conditions for triangle congruence.

**Additional Directions**

None

**Additional Materials**

- **Are the Triangles Congruent? Cards**
- **Congruent Triangles Hint Sheet**
- Highlighters (optional)
- Patty paper (optional)

**Listen For . . .**

- Identification of corresponding angles and corresponding sides of triangles.
- Identification of congruent angles and congruent sides of triangles.
- Connections between given information and possible triangle congruence theorems related to given information.

**Vocabulary**

- Altitude of a triangle
- Bisect
- Congruent triangles
- Corresponding parts of congruent triangles
- Median
- Parallel
- Parallelogram
- Perpendicular lines
- Right angles
- Vertex angle

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Key vocabulary terms are identified for each phase.

Key ideas and concepts to listen for as students complete each phase are listed.

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# What is in a lesson found in *Closing the Distance*?

The explain phase includes debriefing questions to guide class discussion for key understandings and skills found in the activities.

## Congruent Triangles



### Explain: Debriefing Questions

The purpose of this activity is to highlight key understandings and skills applied in the Explore phase of this lesson.

- Did you focus on angles or segments when trying to determine if two triangles were congruent? Why?
- How did you determine if you had enough information to prove two triangles are congruent?
- Was the needed information always in the list of given information? What did you do if it was not?



### Elaborate: Congruent Triangle Proofs

The purpose of this activity is to reinforce students' understanding of how to prove two triangles are congruent using congruency theorems.

#### Additional Directions

Prompt students to compare their proof with someone who has written the same type of proof.

Listen For . . .

- Identification of corresponding angles and corresponding sides of triangles.
- Identification of congruent angles and congruent sides of triangles.
- Connections between given information and possible triangle congruence theorems related to given information.
- Understanding of how to determine what additional information is needed when there is not enough information to prove two triangles are congruent.
- Understanding of how to justify a sequenced set of mathematical statements to prove a geometric relationship using proof methods, such as a two-column proof, a flow proof, and a paragraph proof.

#### Additional Materials

- **Congruent Triangles Hint Sheet**

#### Vocabulary

- Congruent triangles
- Corresponding parts of congruent triangles
- Hypotenuse-Leg Theorem
- Angle-Angle-Side Theorem
- Angle-Side-Angle Theorem
- Side-Angle-Side Theorem
- Side-Side-Side Theorem

Complete directions are included on each student page. Additional directions are provided for teacher-facilitated aspects of an activity.



### Evaluate: Congruent Triangles

The purpose of this activity is to assess students' understanding of how to justify triangles are congruent.

Question	TEKS	Correct Answer
1	G(6)(B)	C
2	G(6)(B)	D
3	G(6)(B)	C
4	G(6)(B)	A

Each selected-response item is labeled with the content student expectation.

## What is in a lesson found in *Closing the Distance*?

Small-group intervention suggestions are provided for the Explore and the Elaborate phases.

### Rate of Change



#### Small-Group Intervention Suggestions

##### Teacher-Led Explore: Rate of Change Card Sort

Vocabulary  
*Rate of change*

##### Small-Group Directions

###### Step 1

- A) Choose Card A. Use a think-aloud process to model how to determine the rate of change using the following questions.
- How do we determine the rate of change from this algebraic representation?
  - How can you determine if the rate of change is positive or negative?
  - Is this equation written in a form that will help you determine the rate of change? Why or why not?
  - How can you rewrite this equation in slope-intercept form?
  - What is the rate of change?
  - How can you verify that your answer is correct?
- B) Record the card letter and the rate of change in the Work Space.
- C) Choose Card G. Facilitate a think-aloud process for students that includes the following questions.
- How is this algebraic representation alike or different from Card A?
  - How do we determine the rate of change from this algebraic representation?
  - How can you determine if the rate of change is positive or negative?
  - Is this equation written in a form that will help you determine the rate of change?
  - How can you rewrite this equation in slope-intercept form?
  - What is the rate of change?
  - How can you verify that your answer is correct?
- D) Prompt students to complete Card J independently of each other.

##### Additional Materials

- **Rate of Change Cards**
- Scissors

##### Listen For . . .

- *Understanding of how to calculate the rate of change from a table, graph, or equation.*
- *Understanding of how to determine the rate of change in a real-world situation.*
- *Understanding of the difference between a positive rate of change and a negative rate of change.*

Each intervention provides instructions on how to make the mathematics more explicit for students struggling with the content within the lesson.

## What is in a lesson found in *Closing the Distance*?

Each lesson provides an opportunity for student reflection as the student self-assesses strengths for each phase of the lesson. Following this self-assessment, students are prompted to note what they are most proud of and to set a goal to improve understanding.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### My Reflections: Strengths and Areas for Improvement

Place a plus sign for each statement you feel is a strength after completing each lesson activity.

Lesson Activity	I can identify additional information needed to prove that two triangles are congruent.	I can determine if a pair of triangles are congruent using the congruency theorems.	I can write a proof to show that two triangles are congruent.	I can justify my reasoning that two triangles are congruent.
Pre-Assessment: Congruent Triangles				
What Can We Determine? Cards				
Are the Triangles Congruent?				
Congruent Triangle Proofs				
Evaluate: Congruent Triangles				

I am most proud . . .

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To improve my understanding, I . . .

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# Closing the Distance: Geometry

Reproducible  
Activity Masters and  
Student Pages