Engaging Mathematics, Volume I: Grade 1

region4®

Engaging Mathematics, Volume I: Grade 1

Teacher Edition

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Region 4 Education Service Center supports student achievement by providing educational products and services that focus on excellence in service for children.

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Acknowledgments
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What is *Engaging Mathematics, Volume I: Grade 1*?

1 An instructional resource featuring over 90 Texas Essential Knowledge and Skills (TEKS)-based, classroom-ready mathematics activities that each take approximately 10 to 15 minutes to complete.

2 A TEKS-based resource that addresses all of the grade 1 mathematics TEKS and provides—

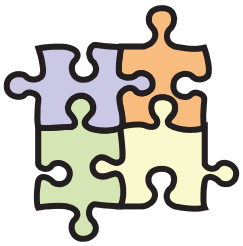
- Rigorous problem-solving tasks;
- Manipulative-based tasks;
- Vocabulary development tasks; and
- Sorting and classifying tasks.

3 A resource that supports high-quality, research-based practices by providing activities that can be used for various purposes, including—

- Engaging warm-ups and opening tasks that draw students into relevant and challenging mathematics;
- Instructional support for all students to help learners articulate, refine, and retain important mathematical concepts, processes, and skills;
- Short-cycle, formative assessments that provide immediate and ongoing feedback to guide instruction for the teacher and learning for the student; and
- Supplemental tasks to support intervention strategies.

4 A resource that incorporates the mathematical process standards by promoting—

- Reasoning, generalizing, and problem-solving in mathematical and real-world contexts;
- Modeling, using tools, and connecting representations;
- Analysis; and
- Communication.



What is found in an Engaging Mathematics TEKS-based activity?

Each activity addresses a specific student expectation that is reflected in the content objective.

Common classroom materials are used for ease of preparation. Page titles for student handouts and activity masters are represented with bold font.

Directions are included to guide student completion of activities with multiple steps.

Each activity includes an opportunity for students to articulate and summarize aspects of their learning using drawings, words, numbers, or symbols.

Debriefing questions are provided for teacher use when supporting student thinking and discourse.

Composing and Decomposing Numbers, Activity 5
1(2)(B)

Activity Objective
I can compose and decompose numbers.

Materials
- **Composing Numbers**

Teacher Directions
1 Prompt students to circle the sets of values that can be composed to represent the same value as the set of beans shown on **Composing Numbers**.
2 **Communicating about Mathematics:** Prompt students to choose one of the sets of values not circled in Set B and describe how they know the value does not represent the same value as the set of beans using the sentence stems.

Debriefing Questions
- How can you decompose numbers?
- Why can a number be decomposed in more than one way?

Listen For . . .
- *Appropriate decomposition of the numbers into groups of tens and ones.*
- *Understanding that numbers can be decomposed into groups of tens and ones in more than one way.*

Answers

Set A:

70 + 2	70 + 10 + 2
60 + 10 + 1 + 1	60 + 10 + 2

Set B:

20 + 20 + 5	40 + 5
4 + 5	30 + 10 + 2 + 3

I did not circle *4 + 5*.

I know these values equal *9*, so it is not the same value as the set of beans because *the set of beans has a value of 45.*

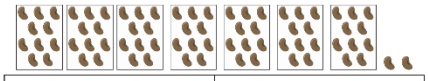
An answer key is included for each activity, when appropriate.

Name: _____

Composing Numbers

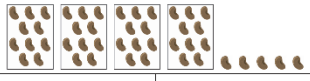
Circle the sets of values that can be composed to represent the same value as the set of beans.

Set A:



70 + 2	70 + 10 + 2
60 + 10 + 1 + 1	60 + 10 + 2

Set B:



20 + 20 + 5	40 + 5
4 + 5	30 + 10 + 2 + 3

I did not circle _____.

I know these values equal _____, so it is not the same value as the set of beans because . . .

# Representing Numbers, Activity 1
1(2)(C), 1(3)(A)

Activity Objective
I can represent numbers using objects, pictures, expanded form, and standard form.

Materials
- **Find the Match Cards**

Teacher Directions
1 Determine a grouping structure:
- *Partners*: Prompt students to work with a partner to match the four **Find the Match Cards** that represent the same value.
- *Whole Group*:
  - Provide each student with one **Find the Match Card**. Place any leftover cards in a central location that is available to students.
  - Prompt students to find the classmates that have the other three cards that represent the same value as their card. If students are unable to complete the set of four, prompt students to look through the leftover cards for the remaining matching cards.

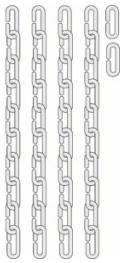
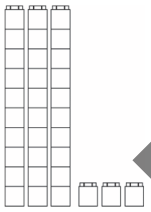
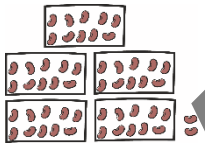
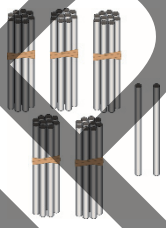
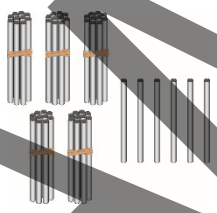
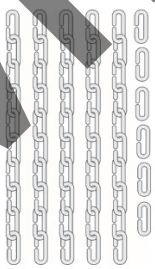
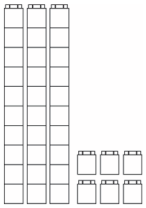
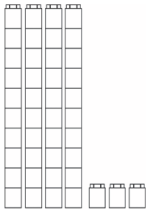
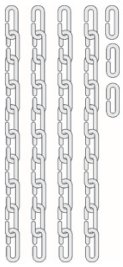
2 **Communicating about Mathematics:** Prompt students to verbally respond to the questions using the sentence stem provided.

- What value does the card represent? How do you know?
  The card represents a value of _____ because . . .

Debriefing Questions
- How can you determine the total value of a model?
- How are the values in the expanded form represented in the models?
- How does the standard form relate to the model? The expanded form?

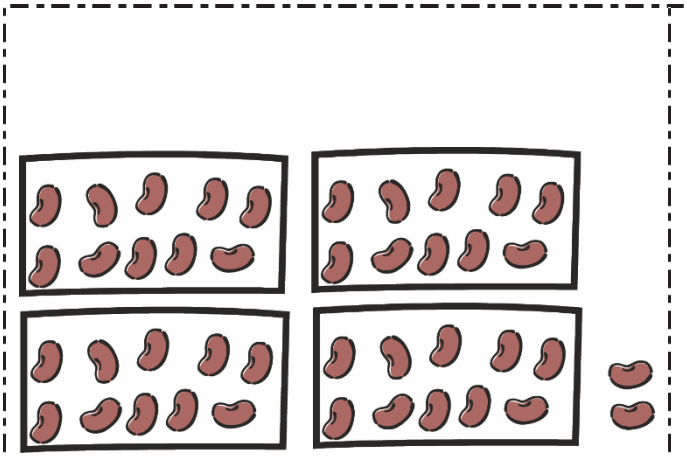
Listen For . . .
- *Appropriate use of skip counting or addition to determine the total value or number.*
- *Understanding that expanded form expresses a number as a sum of the values of each digit, and this sum represents the standard form of the number.*
- *Connections among the pictures, expanded form, and standard form of numbers.*

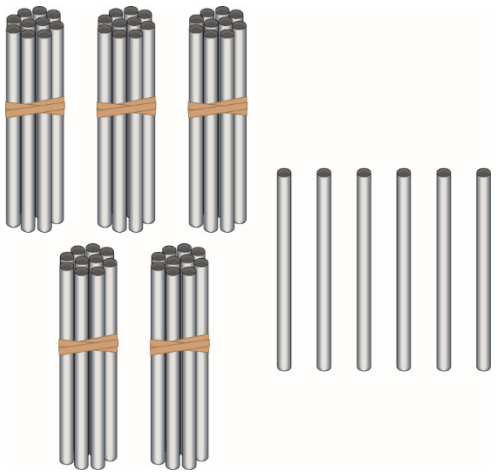
Answers

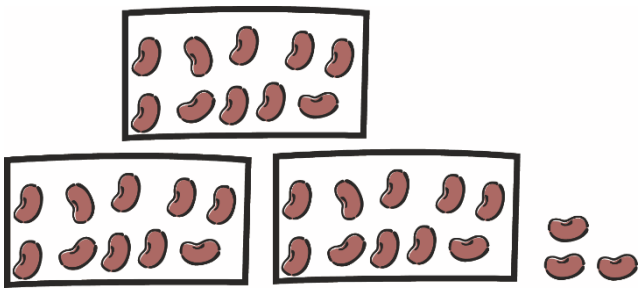
42			40 + 2
33			30 + 3
52			50 + 2
56			50 + 6
36			30 + 6
43			40 + 3

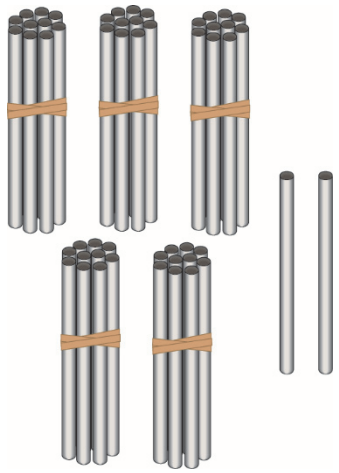
Find the Match Cards

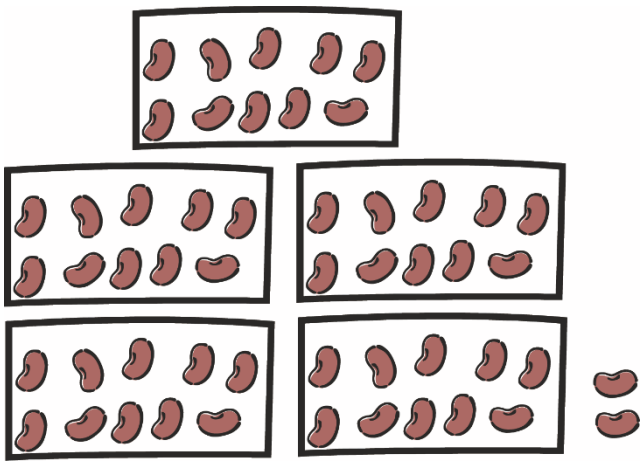
Cut along the dashed lines.

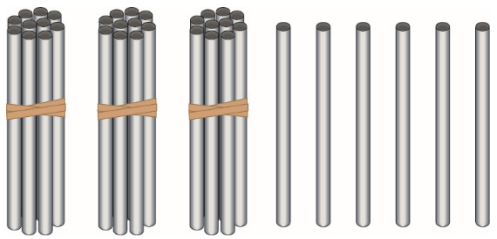


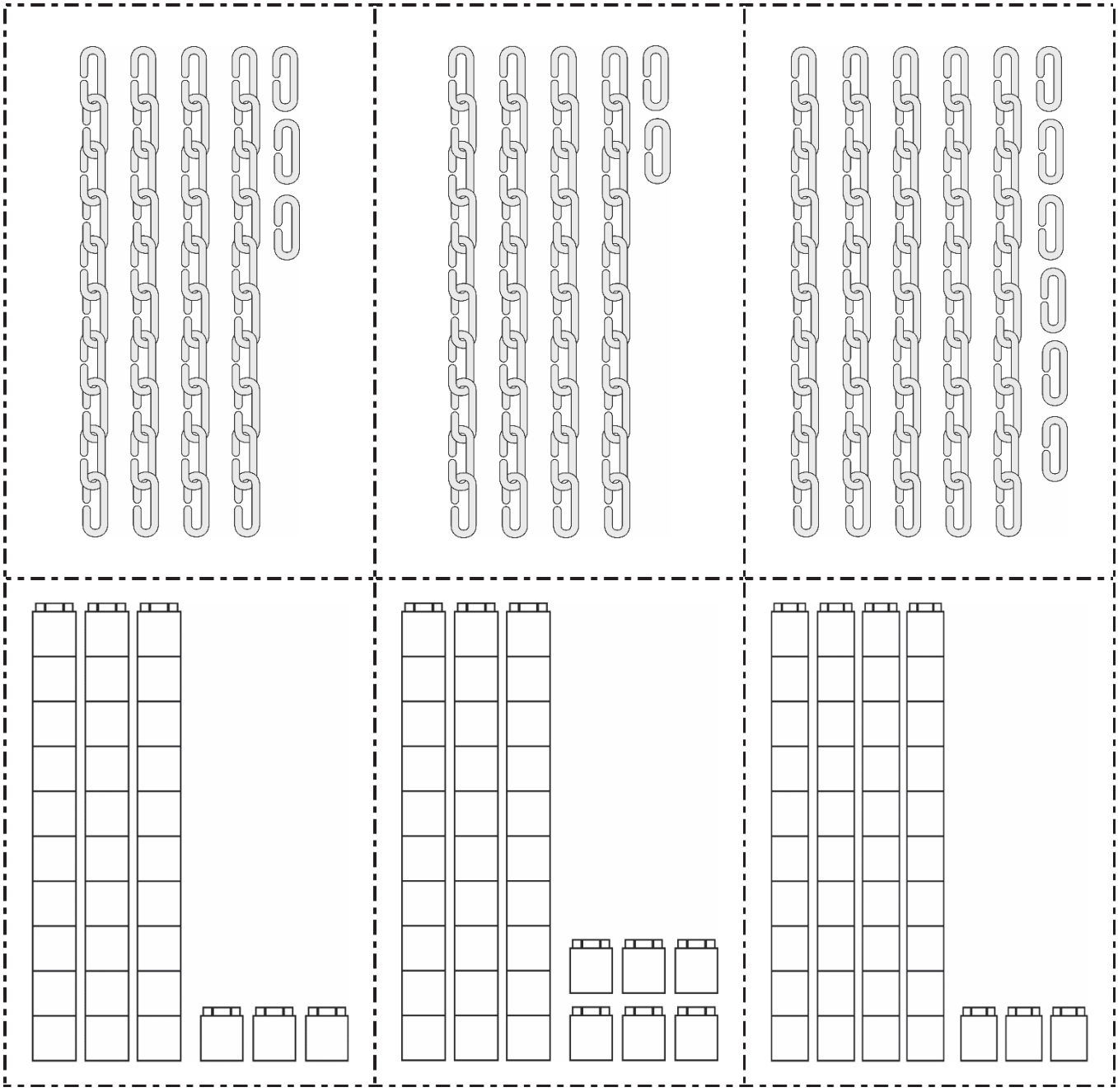












36	33	52
43	42	56
40 + 3	30 + 3	50 + 2
40 + 2	30 + 6	50 + 6

Generating Addition and Subtraction Word Problems, Activity 2 1(3)(F)

Activity Objective
I can generate and solve addition and subtraction problems.

Materials
- **Create and Solve**
- **Sentence Frames** (optional)

Teacher Directions
1. Prompt students to choose one number sentence by circling the number sentence on **Create and Solve**. Then create a word problem.
   Sentence Frames may be used to help students generate a word problem. The students would circle the number sentence that matches the sentence frame provided.
2. **Communicating about Mathematics:** Prompt students to trade papers with a partner. Prompt students to share their problems and to solve each other's problem.

Debriefing Questions
- How can the location of the unknown help you create a word problem?
- How can you determine the unknown for the number sentence?

Listen For . . .
- *Use of the operations, knowns, and unknown in a number sentence to generate a word problem.*
- *Appropriate methods for determining the unknown such as counting strategies, fact strategies, or use of other models.*
- *Connections between problem types and number sentence.*

Answers
Answers will vary.

$\square + 8 = 13$ Kyle had *some* rocks. He found *8* more rocks. Now Kyle has *13* rocks. How many rocks *did Kyle have at the start*?

$16 - \square = 9$ Anisha had *16* seashells. She gave some to her brother. Now she has *9* seashells. How many seashells *did Anisha give her brother*?

$17 = 9 + \square$ There are *17* markers. *Nine* of the markers are blue markers and the *rest* of the markers are red markers. How many markers *are red markers*?

Name: _____

Create and Solve

$\square + 8 = 13$ $16 - \square = 9$ $17 = 9 + \square$

Sentence Frames

Cut along the dashed lines.

Kyle had _____ rocks. He found _____ more rocks. Now Kyle has _____ rocks. How many rocks _____ _____?

Anisha had _____ seashells. She gave _____ to her brother. Now she has _____ seashells. How many seashells _____ _____?

There are _____markers. _____ of the markers are blue markers and the _____ of the markers are red markers. How many markers _____ _____?

# Telling Time, Activity 2
1(7)(E)

Activity Objective
I can tell time to the hour and half hour.

Materials
- **Time Dominoes**

Teacher Directions
1. Arrange students in pairs.
2. Prompt each student to select seven **Time Dominoes**. Place the remaining dominoes face-down in a pile.
3. Prompt Student A to place a time domino face-up to begin the game. Prompt Student A to read the time on the analog clock.
4. Prompt Student B to try making a match using the digital clock on one of his or her **Time Dominoes**.
    - If a match is made, the card should be placed next to the end that matches and the time on the new analog clock should be read for Student A to try and find a match.
    - If a match is NOT made, he or she may take a **Time Domino** from the pile.
5. Prompt students to continue taking turns until all of the dominoes are matched.
6. **Communicating about Mathematics:** Prompt students to verbally respond to the question using the sentence stem provided.

    - How can you determine if the time on an analog clock and digital clock represent the same time?

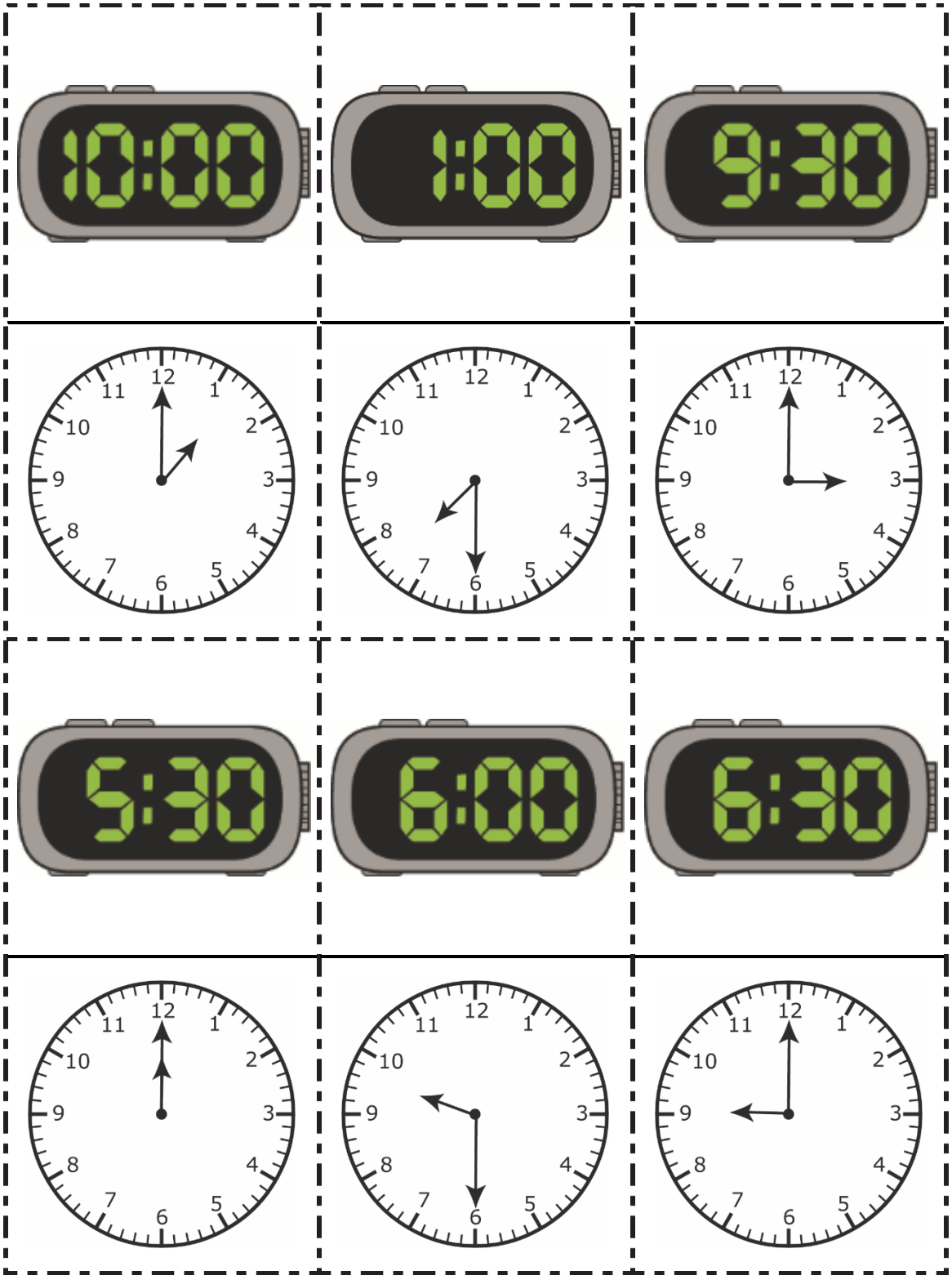
Debriefing Questions
- How can you tell time on an analog clock?
  I can tell time by . . .
- How can you tell time on a digital clock?
  I can tell time by . . .

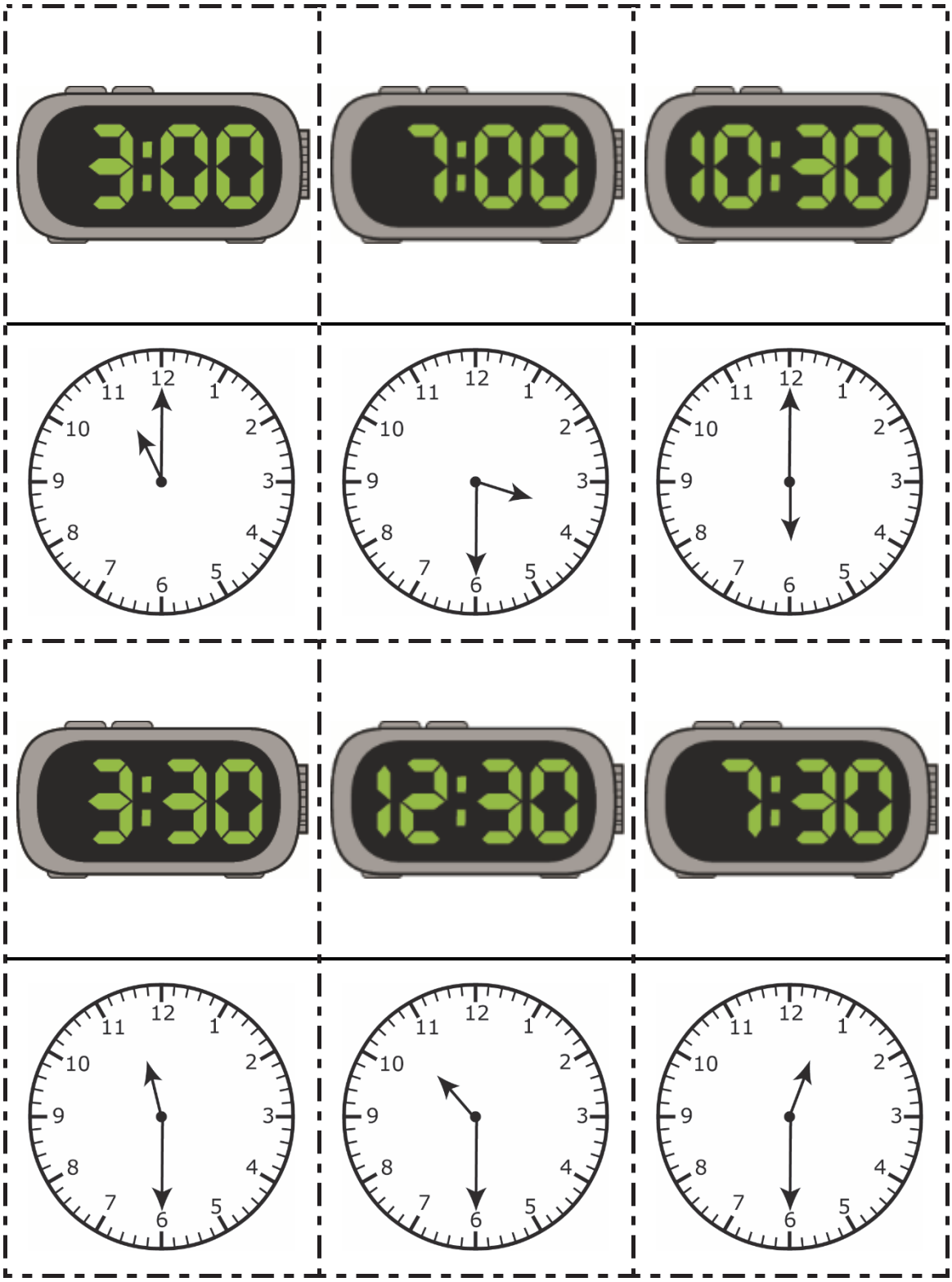
Listen For . . .
- *Understanding that the long hand on an analog clock represents the minutes and the short hand represents the hour.*
- *Understanding the number(s) to the left of the colon represent the hour and the number(s) to the right of the colon represent the minutes.*

Answers
Time shown on the analog clock should match the time shown on the digital clock.

Time Dominoes

Cut along the dashed lines.




3:00
7:00
10:30
3:30
12:30
7:30