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Mathematics Readers—Level 1

This sample includes the following:

To Create a World in which Children Love to Learn!

Grade 1

Teacher Created Materials PUBLISHING

MATHEMATICS READERS

Teacher's Guide

Table of Contents

Introduction

Unit 1: Place Value

Unit 2: Operations and Algebraic Reasoning

Unit 3: Measurement and Data

Unit 4: Geometry

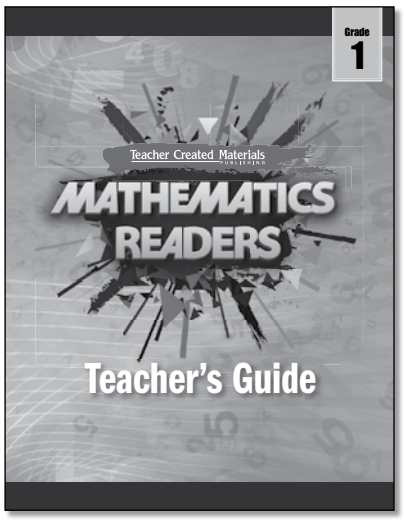
Appendix

How to Use This Product

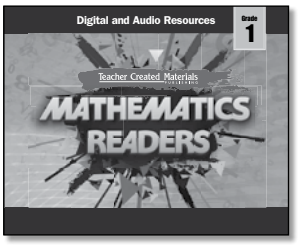
Kit Components

6 copies of 20 books

Teacher's Guide



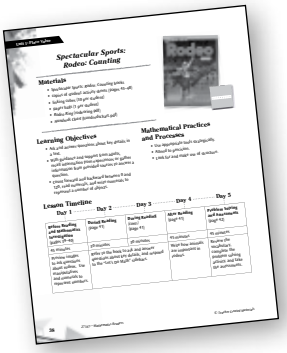
Digital and Audio Resources



How to Use This Product *(cont.)*

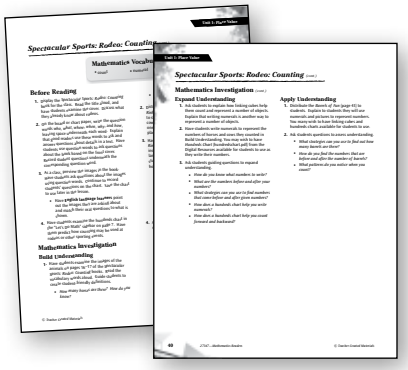
Teacher's Guide

Each five-day lesson sequence is organized in a consistent format for ease of use.



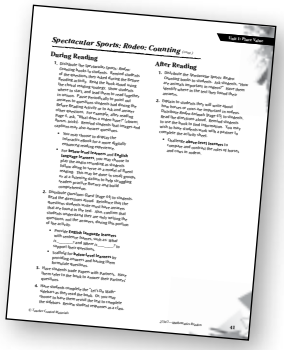
Overview

- The overview page includes learning objectives, a materials list, and a suggested timeline for lesson.



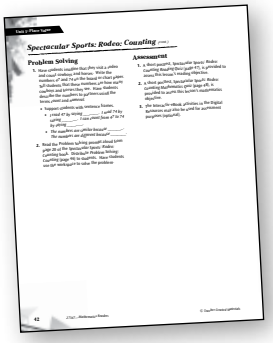
Day 1

- Students are introduced to the book and the math concept or skill.
- Students build, expand, and apply understanding of the math skill with concrete, representational, and abstract activities.



Days 2, 3, and 4

- Students complete reading and writing activities, as well as the "Let's Do Math" sidebars.



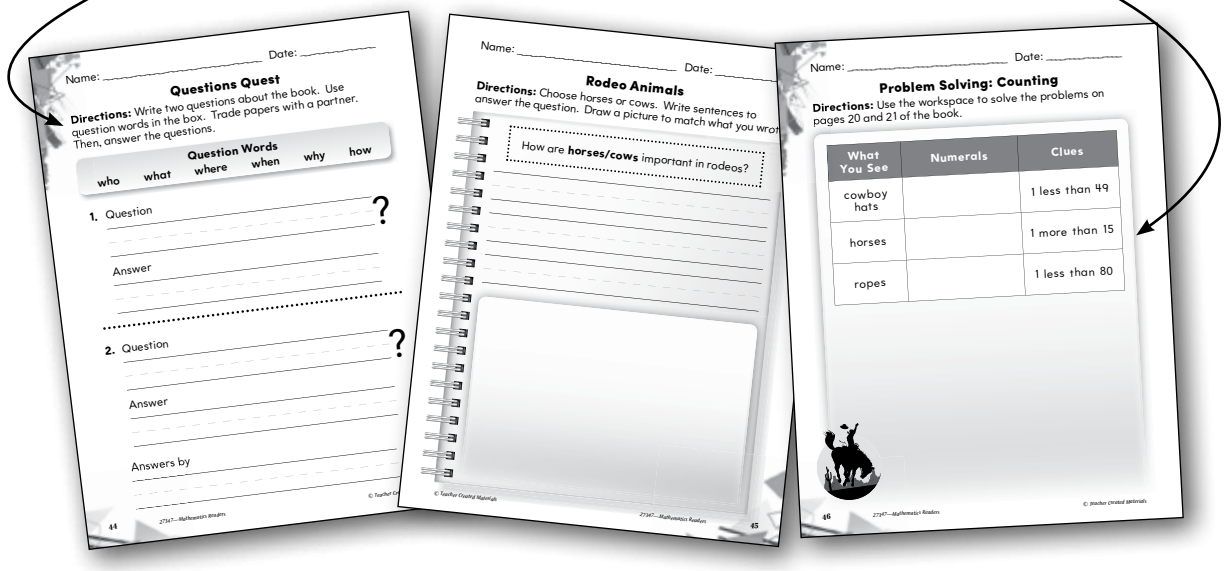
Day 5

- Students take what they've learned and apply it in context in the Problem Solving activity.
- Students take the reading and mathematics assessments.

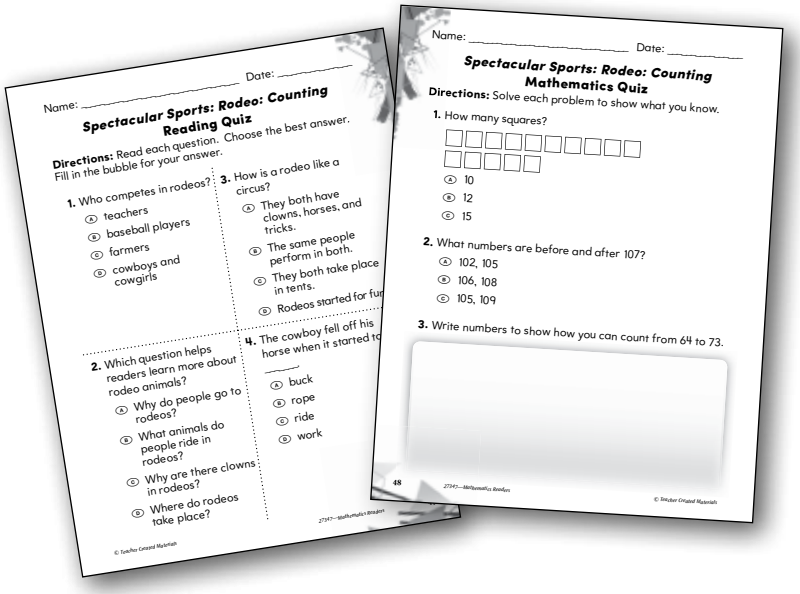
How to Use This Product *(cont.)*

Student Activity Sheets and Assessments

clear directions and activities that promote higher-order thinking skills



reading and math quizzes with text-dependent questions



How to Use This Product *(cont.)*

Pacing and Instructional Setting Options

The following pacing and instructional setting options show suggestions for how to use this product. *Mathematics Readers* is flexibly designed and can be used in tandem with a core curriculum within a mathematics block, literacy block, or both. Teachers should customize pacing according to student need (instruction may need to be extended over more days) and the teacher's preferred instructional frameworks, such as Guided Math or Guided Reading. This suggestion reflects one lesson per book for each of the 20 books. Each lesson spans 5 instructional days and requires 30–45 minutes, for a total of approximately 65 hours over the course of 100 days.

Day	**1**	**2**	**3**	**4**	**5**
Activity	Before Reading and Mathematics Investigation	During Reading	During Reading *(cont.)*	After Reading	Problem Solving and Assessments
Instructional Time	45 minutes	30 minutes	30 minutes	45 minutes	45 minutes

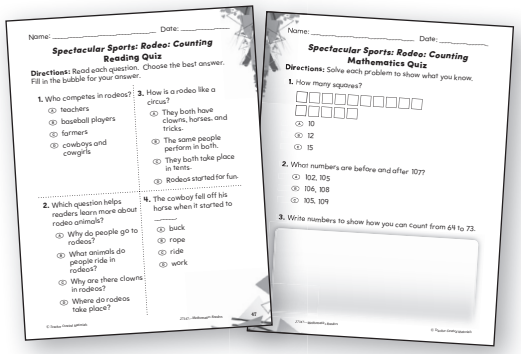
***Mathematics Readers* within the Guided Math and Balanced Literacy Frameworks**
Classroom Environment of Numeracy and Literacy—The books in *Mathematics Readers* contribute to an environment of numeracy and literacy by immersing students in real-world connections to mathematics and by giving students the opportunity to learn outside of content-area silos.
Whole-Class Instruction—The Before Reading activity in each *Mathematics Readers* lesson is a great opportunity to activate students' prior knowledge and capture their interest in a topic.
Small-Group Instruction—The lessons in *Mathematics Readers* offer flexibility that allows students to complete Before Reading, Mathematics Investigation, During Reading, and After Reading activities in small groups or any other preferred instructional setting, depending on student need. These activities have differentiation suggestions and targeted objectives and give students time to work with manipulatives and models.
Workshop—The During Reading, After Reading, and Problem Solving activities in each *Mathematics Readers* lesson can be completed during Math or Reading Workshop, in centers or at workstations, depending on students' previous learning experiences and their need for teacher support.
Conferencing—The Problem Solving activity and assessments in each *Mathematics Readers* lesson offer multiple opportunities for teachers and students to confer about concepts and ideas.
Assessment—*Mathematics Readers* offers multiple formative and summative assessment opportunities. Teachers can gain insight into student learning through reading and mathematics quizzes, small-group observations, analysis of written assignments, and a culminating activity.

How to Use This Product *(cont.)*

Assessment

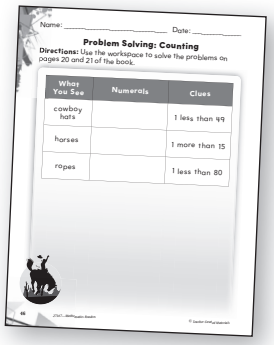
Mathematics Readers offers multiple assessment opportunities. You can gain insight into student learning through reading and mathematics quizzes, small-group observations, analysis of written assignments, and a culminating activity. These formal and informal assessments provide you with the data needed to make informed decisions about what to teach and how to teach it. This is the best way for you to know who is struggling with various concepts and how to address difficulties that students are experiencing with the curriculum.

Mathematics and Reading quizzes—At the end of each lesson in this Teacher's Guide are two quizzes—one to assess the reading objective and one to assess the mathematics objective. These short assessments include text-dependent questions and may be used as open-book evaluations.



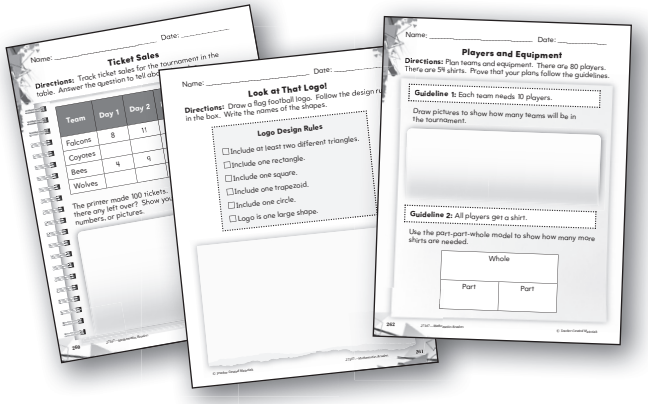
Mathematics and Reading Quizzes

Problem Solving activity—Each lesson includes a multistep problem solving activity that can be used to assess understanding of the mathematical concepts or skills.



Problem Solving Activity

Culminating activity—The culminating activity asks students to apply what they have learned throughout the units in an engaging and interactive way. Students use what they have learned to create new ideas in a real-life context.



Culminating Activity

Progress monitoring—There are several points throughout each lesson when useful evaluations can be made. These evaluations can be made based on group, paired, and individual discussions and activities.

Travel Adventures: The Great Barrier Reef: Place Value

Materials

- *Travel Adventures: The Great Barrier Reef: Place Value* books
- copies of student activity sheets (pages 54–59)
- images of blue tang fish and angelfish, if available
- linking cubes (50 per student)
- *Fish* (fish.pdf)
- *Place Value Chart* (placevaluechart.pdf)

Learning Objectives

- Identify the reasons an author gives to support points in a text.
- Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.
- Understand that the digits of two-digit numbers represent amounts of tens and ones, and use place value strategies to compare two-digit numbers with words and symbols.

Mathematical Practices and Processes

- Reason abstractly and quantitatively.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and express regularity in repeated reasoning.

Lesson Timeline

Day 1 ····· Day 2 ····· Day 3 ····· Day 4 ····· Day 5

Before Reading and Mathematics Investigation (pages 50–51)	**During Reading** (page 52)	**During Reading** *(cont.)* (page 52)	**After Reading** (page 52)	**Problem Solving and Assessments** (page 53)
45 minutes	30 minutes	30 minutes	45 minutes	45 minutes
Use information from the back cover to support an author's point. Use manipulatives to make groups of tens and ones to compare two-digit numbers.	Read the text and identify reasons that support a point the author makes, and respond to the "Let's Do Math" sidebars.		Give reasons to support an opinion.	Review the vocabulary, complete the problem solving activity, and take the assessments.

Travel Adventures: The Great Barrier Reef: Place Value *(cont.)*

Mathematics Vocabulary

- equal to (=)
- (groups of) ten
- greater than (>)
- less than (<)

Before Reading

1. Display the *Travel Adventures: The Great Barrier Reef: Place Value* books. Read the title and back cover aloud. Explain the author's point that the Great Barrier Reef is beautiful. Have students identify reasons why the author thinks the Great Barrier Reef is beautiful (e.g., *It is big, old, alive,* and *Many colorful sea creatures live there.*).
2. Explain that authors give reasons to support points they make in their writing. Good readers find support in the text to better understand the points authors make.
3. Preview the "Let's Do Math" sidebars with the class. Have students predict the point of the mathematics in the book. Have them support their predictions with evidence, such as math words, examples, and diagrams.

Mathematics Investigation

Build Understanding

1. Have students examine the image of the sea turtle on page 13 of the *Travel Adventures: The Great Barrier Reef: Place Value* books. Ask students to imagine that a scuba diver sees 24 sea turtles while exploring the Great Barrier Reef. Read the vocabulary words aloud. Guide students to create student-friendly definitions.
    - *How is 24 sea turtles different from 10 sea turtles? How do you know?*
    - *Think of numbers of sea turtles that are not 24. How do you your numbers compare with 24?*
    - *What does each digit in 24 mean?*
2. Tell students that on the same day, the scuba diver also sees 16 blue tang fish and 29 angelfish. If available, display images of a blue tang fish and an angelfish. Distribute linking cubes to students. Ask students how they can use the cubes to make groups of tens and ones to prove which number of fish is greatest.
    - Have **above-level learners** work with partners, each student using cubes to represent chosen numbers with groups of tens and ones. Have students name the number represented by their partners' cubes, and then work together to compare the numbers.
    - Provide **below-level learners** with multiple opportunities to build groups of ten with cubes and to state how many groups of ten are represented. Continue with groups of ten (1, 2, or 3) with some ones left over, and discuss what numbers are represented.
3. Ask students guiding questions to build understanding.
    - *How many groups of ten fish are there? How do you know?*
    - *How can this help you decide which number of fish is greater?*
    - *After making groups of ten, were there any leftover ones?*

Travel Adventures: The Great Barrier Reef: Place Value *(cont.)*

Mathematics Investigation *(cont.)*

Expand Understanding

1. Ask students to explain how linking cubes helped them compare numbers. Explain that phrases and symbols can also be used to compare numbers. On the board or chart paper, write the phrases *greater than*, *less than*, and *equal to*. Then, write *Dev saw 52 fish* and *Steven saw 56 fish*.
2. Distribute nine groups of ten and nine single fish cut from *Fish* (fish.pdf) from the Digital Resources to students. Additionally, distribute *Place Value Chart* (placevaluechart.pdf) from the Digital Resources to students. Have students represent each number on the place value chart using groups of ten fish and single fish. Then, have them use the model to compare the numbers using the phrases *greater than, less than,* or *equal to*.
3. Tell students that symbols can be used to represent the phrases. On the board or chart paper, write the symbols >, <, and = next to their corresponding phrases. Next, write *52 _____ 56*. Have students use the symbols >, <, or = to compare the numbers. Point out to students that the "arrow" in the symbol points to the lesser number.
4. Ask students guiding questions to expand understanding.
   - *How many groups of ten are in 52? How many ones?*
   - *How many groups of ten are in 56? How many ones?*
   - *How can you tell which number is greater?*
   - *What words or symbols can you use to compare 52 and 56?*

Apply Understanding

1. Distribute *Making Comparisons* (page 54) to students. Explain they will first use the words *greater* or *less* to compare numbers. Then, they will use the symbols >, <, or = to compare numbers.
2. Ask students questions to assess understanding.
   - *How can groups of ten help you compare numbers?*
   - *If the number of tens is equal, how can you use ones to compare the numbers?*
   - *When there are no ones left over, what digit will be in the ones place?*

Travel Adventures: The Great Barrier Reef: Place Value *(cont.)*

During Reading

1. Distribute the *Travel Adventures: The Great Barrier Reef: Place Value* books to students. Read the book aloud using the echo reading strategy. For this strategy, read one section of text, stop, and have students read the same section of text in the same way. Remind students that good readers find reasons to support points the author makes. After reading page 18, have students find reasons from the text to support the point that we must help take care of the Great Barrier Reef.
    - You may choose to display the Interactiv-eBook for a more digitally enhanced reading experience.
    - For **below-level learners** and **English language learners**, you may choose to play the audio recording as students follow along to serve as a model of fluent reading. This may be done in small groups or at a listening station to help struggling readers practice fluency and build comprehension.
2. Distribute *Reef Reasons* (page 55) to students. Read the directions aloud. Remind students to find a reason to support the author's point and draw a picture that matches.
    - Challenge **above-level learners** to identify and support a point the author makes that is not included on the activity sheet.
    - Scaffold for **below-level learners** by directing them to pages where supporting reasons are found.
3. Have students complete the "Let's Do Math" sidebars as they read the book. Or, you may choose to have them revisit the text to complete the sidebars. Review student responses as a class.

After Reading

1. Distribute the *Travel Adventures: The Great Barrier Reef: Place Value* books to students. Have students discuss whether they would like to visit the Great Barrier Reef. Have them justify their opinions with reasons and details from the text.
2. Distribute *Reef Opinion* (page 56) to students. Read the directions aloud. Remind students to support their opinions with reasons and details.

Travel Adventures: The Great Barrier Reef: Place Value *(cont.)*

Problem Solving

1. Ask students to imagine they are going snorkeling in the Great Barrier Reef. Have them write a number of fish between 50 and 90 they would like to see. Ask students to identify how many groups of ten and how many ones are in their numbers. Then, have students compare their numbers to partners' numbers using the terms *less than*, *greater than*, or *equal to*.
   - Support students with sentence frames.
     - *I would like to see _____ fish. My number has _____ tens and _____ ones.*
     - *My number is _____ my partner's number because _____.*
     - *My partner's number is _____ my number because _____.*
2. Read the Problem Solving prompt aloud from page 20 of the *Travel Adventures: The Great Barrier Reef: Place Value* book. Distribute *Problem Solving: Finding Fish* (page 57) to students. Have students use the workspace to solve the problem.

Assessment

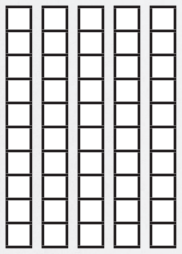
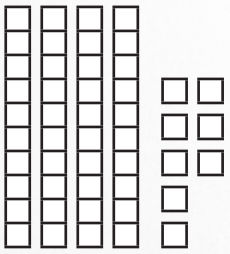
1. A short posttest, *Travel Adventures: The Great Barrier Reef: Place Value Reading Quiz* (page 58), is provided to assess this lesson's reading objective.
2. A short posttest, *Travel Adventures: The Great Barrier Reef: Place Value Mathematics Quiz* (page 59), is provided to assess this lesson's mathematics objective.
3. The Interactiv-eBook activities in the Digital Resources may also be used for assessment purposes (optional).

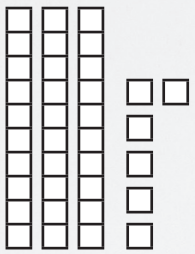
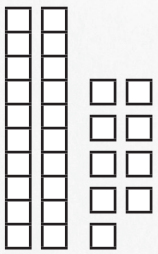
Name: _____ Date: _____

Making Comparisons

Directions: Compare the numbers.

1. Write *greater* or *less* to compare.

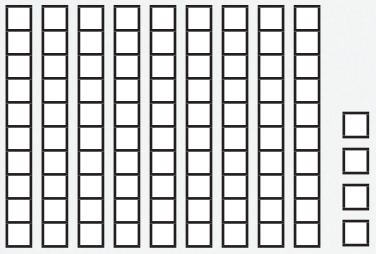
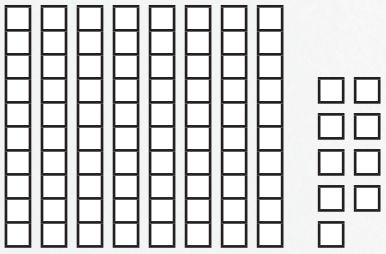
a.  _____ is _____ than 

b.  _____ is _____ than 

_____

c. 11 is _____ than 31

2. Write >, <, or = to compare.

a.  ◯ 

b. 8 tens and 4 ones ◯ 9 tens and 2 ones

c. 25 ◯ 27

Name: _____ Date: _____

Reef Reasons

Directions: Write a reason from the book that supports the author's point. Draw a picture to match what you wrote.

Author's Point:

There is a lot of life in the Great Barrier Reef.

Supporting Reason:

Name: _____ Date: _____

Reef Opinion

Directions: Circle your answer to the question. Write a reason for your choice. Then, draw a picture to match what you wrote.

Would you like to visit the Great Barrier Reef?

Yes No

Reason:

Name: _____ Date: _____

Problem Solving: Finding Fish

Directions: Use the workspace to solve the problems on page 20 of the book.

Name: _____ Date: _____

Travel Adventures: The Great Barrier Reef: Place Value Reading Quiz

Directions: Read each question. Choose the best answer. Fill in the bubble for your answer.

1. Which reason supports the point that the Great Barrier Reef is alive?

- Ⓐ Islands are in the reef.
- Ⓑ People visit the reef.
- Ⓒ Sea creatures are part of the reef.
- Ⓓ Rocks are part of the reef.

2. *Sea creatures of all kinds call it home* supports which of these points?

- Ⓐ Many people visit the reef.
- Ⓑ There is a lot of life in the reef.
- Ⓒ The reef is very old.
- Ⓓ A reef lies under the water.

3. Which reason supports the point that visitors to the reef must take care?

- Ⓐ We want the reef to last.
- Ⓑ There are many different fish.
- Ⓒ The colors in the reef are bright.
- Ⓓ Birds live on islands.

4. The Great Barrier Reef is home to _____ such as fish and birds.

- Ⓐ coral
- Ⓑ islands
- Ⓒ visitors
- Ⓓ creatures

Name: _____ Date: _____

Travel Adventures: The Great Barrier Reef: Place Value Mathematics Quiz

Directions: Solve each problem to show what you know.

1. 56 is _____ 65

- (A) greater than
- (B) less than
- (C) equal to

2. 19 ◯ 22

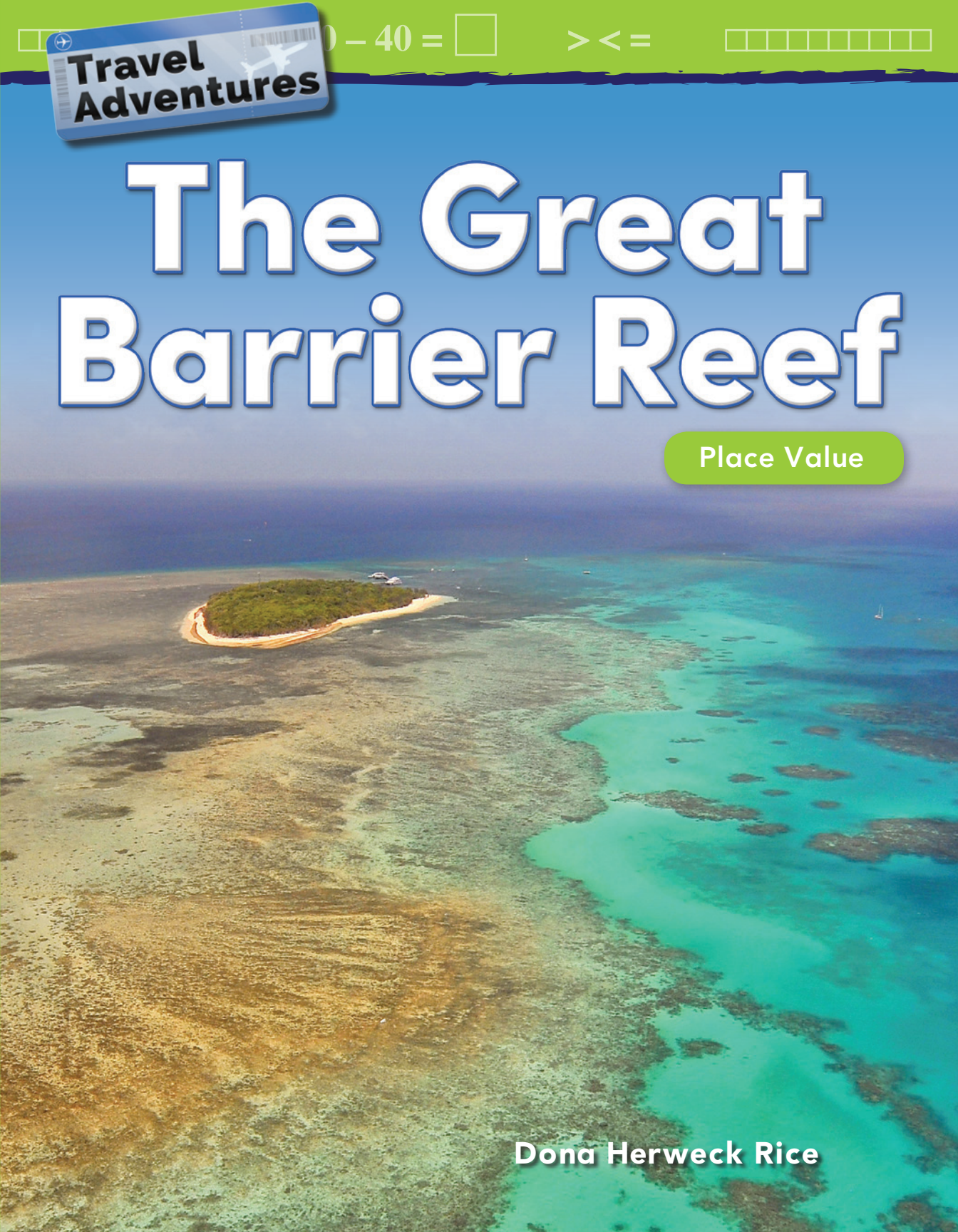
- (A) >
- (B) <
- (C) =

3. Which number is greater: 72 or 42? How do you know? Show your thinking with words, numbers, or pictures.

Travel Adventures

The Great Barrier Reef

Place Value



Dona Herweck Rice

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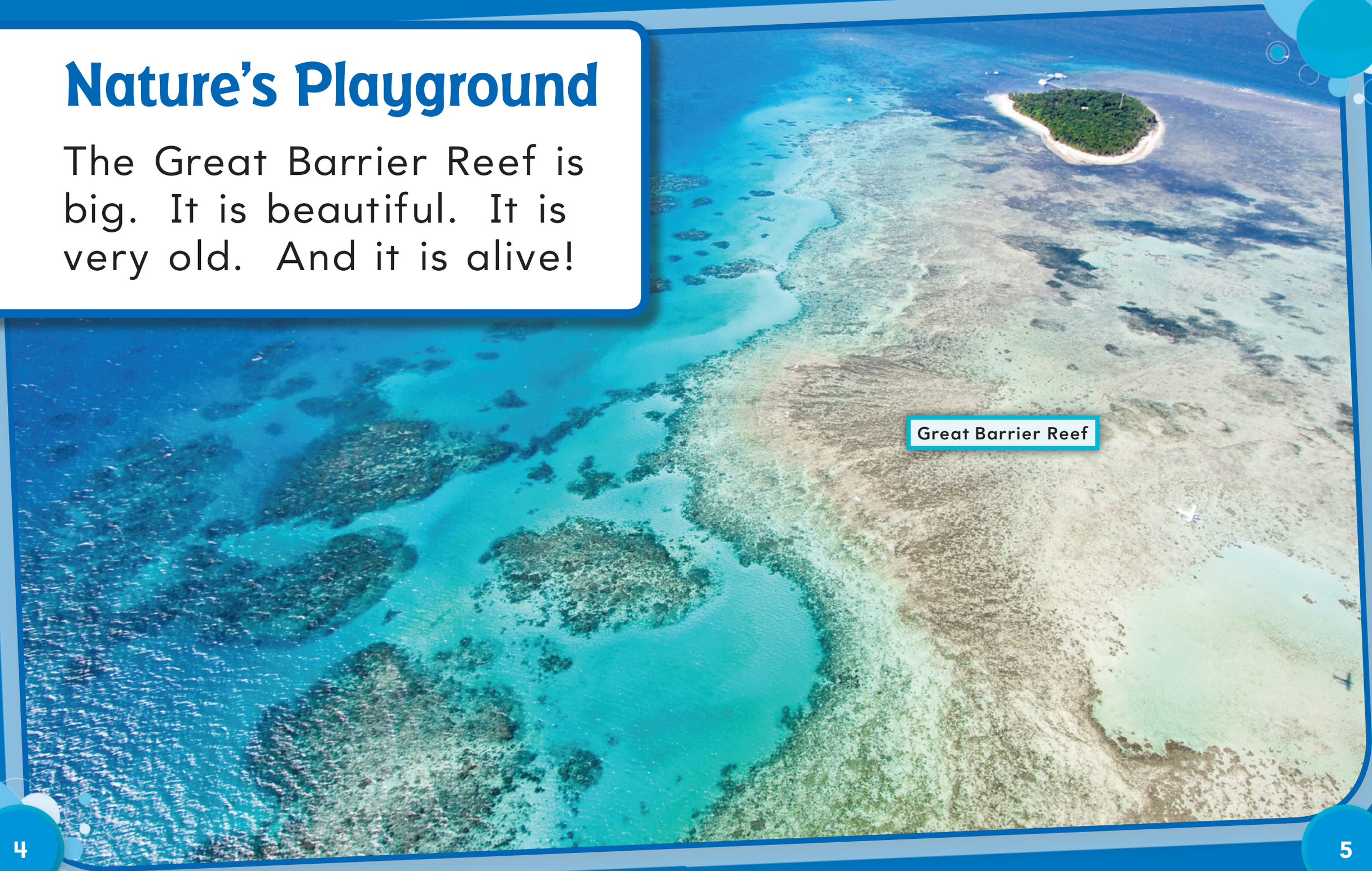
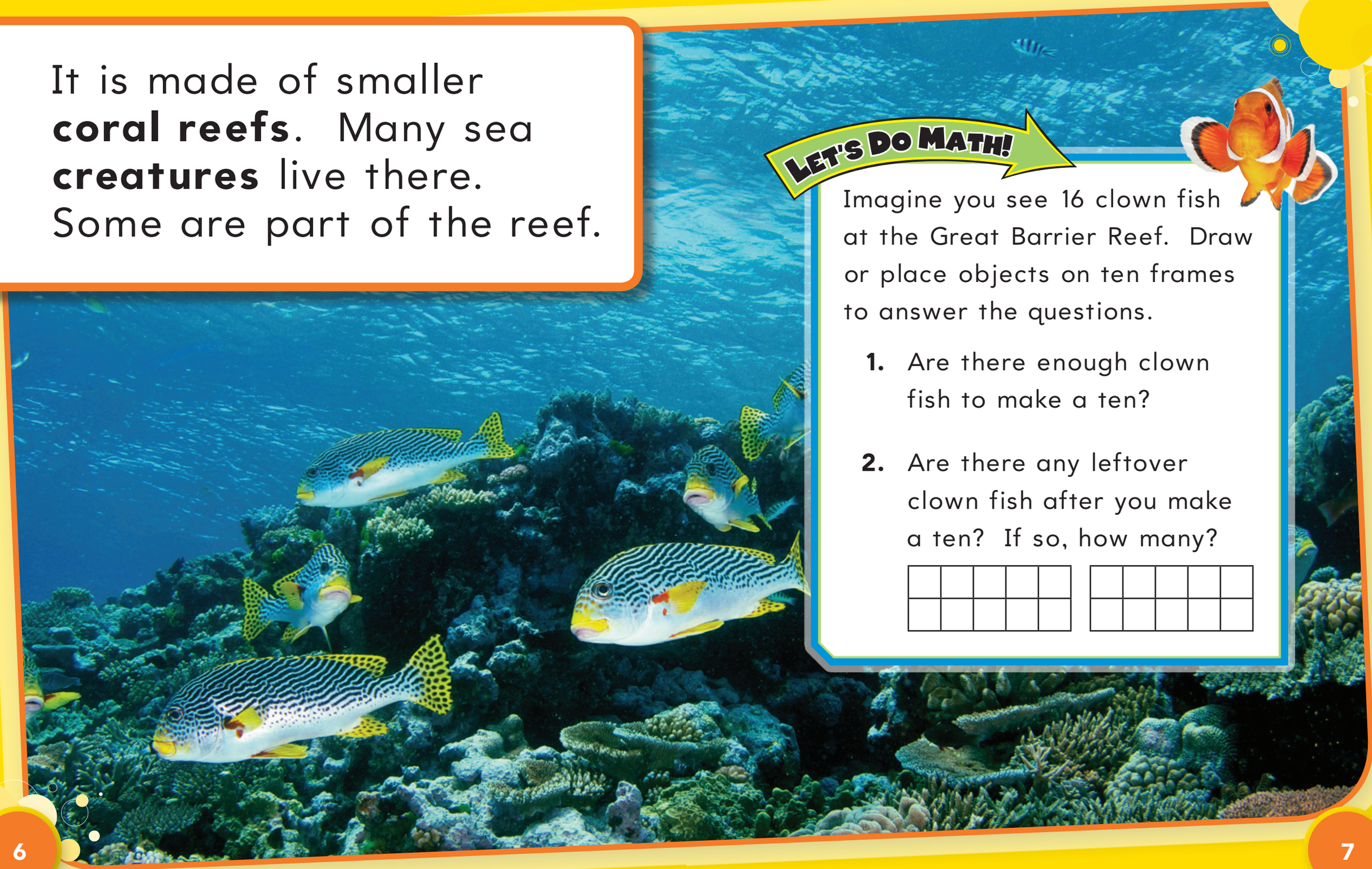
Nature's Playground

The Great Barrier Reef is big. It is beautiful. It is very old. And it is alive!



It is made of smaller **coral reefs**. Many sea **creatures** live there. Some are part of the reef.



Let's Do Math!

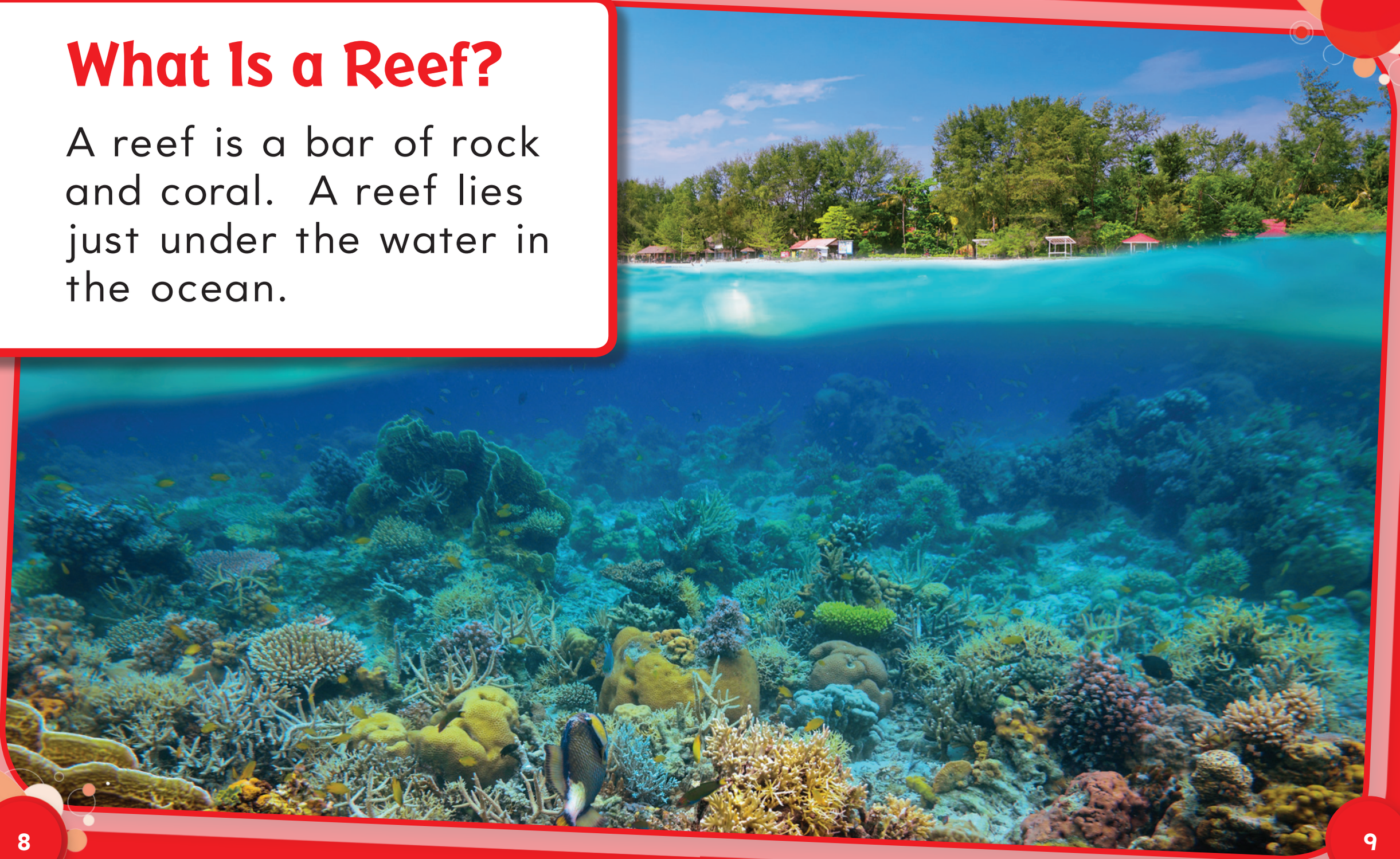
Imagine you see 16 clown fish at the Great Barrier Reef. Draw or place objects on ten frames to answer the questions.

1. Are there enough clown fish to make a ten?

2. Are there any leftover clown fish after you make a ten? If so, how many?

What Is a Reef?

A reef is a bar of rock and coral. A reef lies just under the water in the ocean.



Living coral grows on the rock. The rock is made from coral that has died.

Live coral is colorful.

Sea Creatures

There is a lot of life in the Great Barrier Reef! Sea creatures of all kinds call it home.

A green sea turtle and some fish swim near the reef.

Hundreds of types of coral live there. Fish of all colors live there. Dolphins and rays live there, too.

coral trout

Let's Do Math!

You are swimming with your brother at the reef. You see 22 blue tangs. Your brother sees 24 blue tangs. Use the phrases "**greater** than" and "**less** than" to compare the number of fish.

1. 22 is _____ 24

2. 24 is _____ 22

spotted eagle ray

The reef is also home to many types of birds. They live on its **islands**.

Take Care!

Many people visit the Great Barrier Reef. They must help take care of it. We want the reef to last!

Let's Do Math!

You **snorkel** through the Great Barrier Reef. You see 12 blue triggerfish. You see 20 green parrotfish. You see 13 yellow cuttlefish. Use > or < to compare the number of fish.

1. 12 _____ 20

2. 20 _____ 13

3. 13 _____ 12

Problem Solving

You are ready to snorkel at the Great Barrier Reef. Down you go! You see...

- 12 rays
- 21 blue tangs

1. How many groups of ten rays are there? Are there any leftover rays? If so, how many?

2. How many groups of ten blue tangs are there? Are there any leftover blue tangs? If so, how many?

3. Use >, <, or = to compare the number of rays and blue tangs.

12 _____ 21

Glossary

coral reefs—hard materials that are formed on the bottom of the sea

creatures—animals

greater—more

islands—areas of land surrounded by water

less—fewer

snorkel—to swim underwater with a breathing tube

Index

Answer Key

Let's Do Math!

page 7:

1. yes
2. yes; 6 leftover clown fish

page 15:

1. less than
2. greater than

page 19:

1. <
2. >
3. >

Problem Solving

1. 1 group of ten; yes; 2 leftover rays
2. 2 groups of tens; yes; 1 leftover ray
3. <

Math Talk

1. What do the symbols >, <, and = mean?
2. What is a number that will have no leftovers after making tens?
3. How are the numbers 15 and 51 alike? How are they different?
4. Lena says that 23 has 2 tens and 3 ones. Peter says 23 has 1 ten and 13 ones. Who is right? Why do you think so?