

Learn Words About a New Subject

Materials Needed

- Student Workbook, pp. 128–129
- Transparency 2

Vocabulary Words

approximate
calculate
certain
estimation
probability

Getting Started



Mystery Word of the Week Clue 1

The _____ that an event will happen sometimes has to be estimated.

- See page 14 for routines for using the Mystery Word of the Week Clue. The mystery word of the week is *likelihood*.

Model/Teach

- Ask the class to turn to page 128 in their workbooks.
- Invite a volunteer to read the Word Learning Tip aloud. Discuss with students that the content words may be words with which they are not familiar. Explain that these words are often used in a specific content area; they are not used as often in books that are not about that subject or in everyday speech and writing.
- Read the Vocabulary Building Strategy to the class as they follow along in their books. Point out that content words may seem difficult, but students can learn their meaning when they remember that these content words all relate to the big idea of problem solving. Have students talk about what they already know about problem solving.
- Direct students to read the directions and look at the story in their workbook. Read the text aloud.
- Before you read the text a second time, do the **Think Aloud** on page 137 to model how to find the meaning of the content words.
- After you have modeled how to find the meaning of the word *probability* by associating the word with the topic, read each scene aloud again. This time, pause at each boldface word to give students time to think about the word's definition.

- Place the transparency on the overhead projector. Have the class add the big idea of the lesson to the top of the transparency.
- Reread the page, again pausing at each word in boldface. Direct the class to think about how each boldface word is linked to the idea of problem solving or to one of the other words. Explain that you also want them to tell you what each word means. For example, probability is connected to the idea of problem solving because it is how likely something is to happen. Be sure they tell you their thinking as they determine each word's meaning.
- As students discuss a word, record their thinking and the definition of the word on the transparency.
- After students have discussed each word, allow them to work in small groups. Give them an opportunity to use flashcards to reinforce word meanings

Independent Activities

- **Discuss the Outcome** Spend a few minutes having the class discuss what they think the outcome will be when Jamal picks a marble from the jar. Do they think the marble will be black or white? Why? Give all students an opportunity to predict the outcome by taking a vote and recording the results on the chalkboard. Encourage students to use vocabulary words in their predictions.
- **Solve a Visual Problem** Arrange students in groups of four to create a visual math problem similar to the problem in the story. If possible, have available tiles, marbles, or small squares of paper on which they can color or write numbers. Ask groups to exchange problems with another group and solve. Encourage them to use new vocabulary words in their discussions. Add any new content words to the word wall.

Think Aloud

Before I share my thinking about how to understand the meaning of these content words, I need to have an idea of what the author's big topic is. I know all of the content words will describe something about that big idea. I ask myself: How are all of these words connected? I look at the words in boldface. They all seem to have to do with problem solving. I read the dialogue between Jamal and Brittany. Jamal says: "Look at this huge jar. It looks like there are more than 300 black and white marbles in it." Brittany asks: "What is the **probability** that you can close your eyes, put your hand in the jar, and choose a black marble?" If I didn't know the word *probability*, I could understand from the dialogue that it probably means: "how likely it is that something will happen." When you want to know the *probability* of something happening, it's important to use problem-solving skills to help you determine outcomes. That's the big idea!

Answer Key

See page 215 for definitions.

Connect Words and Meanings

Materials Needed

- Student Workbook, p. 130
- Umbrella Chart Graphic Organizer, p. 228

Think Aloud

Here's what I would do to complete this activity. First I would read the definition to see which vocabulary word fits in the blank. Here's the definition: "an answer that you believe is close to the exact answer; the act of coming up with an answer that is close to the exact answer." I notice the words "close to the exact answer." I know from my math experience that when I want an answer that is close to the exact answer I estimate, and since *estimation* is one of the words, I think that's the correct word. So I write *estimation* in the blank.

Answer Key

1. estimation
2. approximate
3. probability
4. certain
5. calculate
6. estimation
7. certain
8. calculate
9. approximate
10. probability

Getting Started



Mystery Word of the Week Clue 2

The weatherperson said that the _____ of snow was about 75 percent.



- Review and Share** Continue the discussion about the possible **outcomes** for the activity on page 137 in the teacher's edition. To extend the activity, change the ratio of white marbles to black marbles to 3 times as many black marbles as white marbles. Encourage students to use vocabulary words in their discussion. Have them discuss how the Word Learning Tip and Vocabulary Building Strategy helped them learn new content words.

Model/Teach

- Ask the class to open their workbooks to page 130.
- Use the **Think Aloud** to model how you would complete this activity.
- Have students finish the rest of the page on their own. Then ask students to share their responses.

Independent Activities



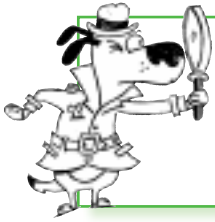
- Review of Chapter 2: Word Parts and Content Words** Remind students that a **suffix** is a letter or group of letters added to the end of a word or root to change its meaning. If necessary, help students generate a list of suffixes, such as *-ing*, *-ed*, and *-or*. Have students work on their own or in pairs to see how many new words they can make from the vocabulary words by changing their suffixes. Ask students to check their work in a dictionary.
- **Create an Umbrella Chart** Arrange students in five groups to create an umbrella chart for *calculate*, *probability*, or *estimation*. For *probability*, for example, students might suggest *more likely*, *less likely*, *possibly*, *sometimes*, or *unlikely* and write these words on the spokes of the umbrella.

Materials Needed

- Student Workbook, p. 131

Use Content Words

Getting Started



Mystery Word of the Week Clue 3

In all _____, you'll choose a blue marble because there are twice as many blue marbles as green marbles.



Review and Share Invite students to share the **new words** they used in the activity on page 130.

Possibilities include *approximately*, *approximated*, *calculated*, *calculating*, *calculator*, *estimator*, *estimate*, *estimated*, or *probable*. Add these words to the chart.

Model/Teach

- Have students open their workbooks to page 131.
- Before students begin, use the **Think Aloud**.
- After you have modeled how to complete the first tip, have students complete the rest of the page on their own. Then ask students to work in pairs to share their responses.

English Language Learners

- Pair more fluent English language learners with those in early speech emergence. Give each pair a handful of small objects, such as coins. Challenge pairs to estimate how many objects there are. Depending on students' fluency they can either write the estimates or say it aloud: "My *estimation* is 25 coins."

Independent Activity



Research a Famous Problem Solver Provide students with reference materials—such as encyclopedias, mathematics textbooks, and computers with Internet access—to research their reports. Remind them to use at least three vocabulary words, along with two new words that relate to problem solving.

Think Aloud

I'd like to share with you how I'd complete this activity. I notice right away that there are ten mathematical tips. That's interesting. The first tip is "When all the tiles in a jar are the same color, you can be _____ that you will choose a tile that is that color." Actually, this is pretty easy because the word that I thought of immediately was "sure," which also means *certain*. I know that "sure" is not a vocabulary word, but *certain* is, and in the context of problem solving, *certain* means that "something will definitely happen." I also know that *certain* deals with *probability* outcomes, so that reinforces that I've chosen the correct word. I write *certain* in the blank.

Answer Key

1. certain
2. calculate
3. probability
4. approximate
5. estimation
6. probability
7. calculate
8. certain
9. estimation
10. approximate

Materials Needed

- Student Workbook, p. 132

Think Aloud

Let's take a look at the first problem. "Jesse has to be at work at 9:00 A.M. It takes him 15 minutes to get dressed, 20 minutes to eat, and 35 minutes to walk to work. What time should he get up? How can you _____ exactly when Jesse has to get up?" Well, I notice that I don't have to solve the problem! I just have to decide which vocabulary word makes sense in the question. Since there are different times mentioned, I think that I probably have to do some mathematical calculations. I look at the vocabulary list and see the word *calculate* so I try it in the question. "How can you calculate exactly when Jesse has to get up?" It makes sense, so I write *calculate* in the blank.

Answer Key

1. calculate
2. approximate
3. estimation
4. certain
5. probability
6. approximate
7. calculate
8. probability

Put Words Into Action

Getting Started

**Mystery Word of the Week Clue 4**

What is the _____ that you will choose a yellow tile?

- ★ **Review and Share** Invite volunteers to read their **research** reports to the class. After all the reports have been read, take a class vote to decide which problem solver made the most significant contribution to mathematics and why.

Model/Teach

- Direct the class to open their workbooks to page 132.
- Before students start, do the **Think Aloud**.
- After you have modeled how to complete this page, ask students to finish the rest of the items on their own and then share their answers.

English Language Learners

- Group more fluent students with those in intermediate and early speech emergence to play "Guess My Word." Invite individual students to choose a vocabulary word without telling it. One person can ask word questions, such as "What do you mean?" "How are you used?" and "Who are your friends?" to determine the word. Challenge other students in the group to guess the word.

Independent Activity

- ★ **Write a Probability Problem** Before students begin this activity, briefly share a typical word problem, such as "The weather bureau says there is a one in four chance that it will rain on Monday. They also say that there is a 50 percent chance that it will rain on Tuesday. On which day is the **probability** greater that it will rain?" Then arrange students in small groups to write their word problems, using the vocabulary words.

Review and Extend

Getting Started

Mystery Word of the Week Clue 5



The word _____ means that something has a greater probability of occurring than of not occurring.

★ Review and Share Have volunteers read their **probability problems**. If problems can be easily worked out in the classroom, give students an opportunity to work them out. Lead a discussion about new words students may have used in their problems that relate to probability. Add them to the Word Wall.

Model/Teach

- Direct the class to turn to page 133 in their workbooks.
- Tell students that they will learn three more problem-solving words as well as review the words they've already learned.
- Share the **Think Aloud** to model how to complete this page.
- After you have modeled how to fill in the blanks, have students complete the activity on their own. Then ask them to share their responses.

Independent Activities

- ★ Search for More Words About Probability** Challenge students to make a list of words that they associate with **probability**. Words and phrases such as *almost always*, *always*, *likely*, *most likely*, *often*, *possibly*, *possible outcome*, *sometimes*, *never*, or *unlikely* are all words that can be associated with **probability**.
- Create Ads** Assign each student one of the vocabulary or bonus words to advertise. The ads should explain the word's advantages by highlighting the big idea, explaining how the word is used, and giving examples of the word in context. Group students who have the same word so they can work together to present their ads to the class.

Think Aloud

I'd like you to follow along as I model how I would complete this page. From the directions, I know that I have to fill in each blank with a problem-solving word that fits. Let's read the first sentence: "The word problem required only a(n) _____ answer, but the students had to make sure that it was _____ and made sense." I see that there are two words to fill in for this sentence. For now, we'll focus on the first blank and then you can do the second blank on your own. Well, even though there are two words that might work here: *estimation* and *approximate*, I can rule out *estimation* immediately because it is a noun and it doesn't make sense in the sentence. The word that makes sense is the adjective *approximate* so I write that in the blank. "The word problem required only an approximate answer...."

Answer Key

Mystery Word of the Week:

likelihood

Accept other words that fit the context, too.

1. approximate, reasonable
2. probability, likelihood, certain
3. estimation, calculate
4. strategy
5. probability, likelihood

Materials Needed

- Student Workbook, p. 134

**Student
Self-Assessment**

Journal Writing Have students explain in their journals some techniques for learning new content words they will encounter. Also ask them to rephrase the Word Learning Tip and the Vocabulary Building Strategy as a song, jingle, or rhyme to make it easier to remember.

Answer Key

1. C 2. B 3. B 4. A 5. A
6. probability 7. calculate
8. approximate 9. estimation
10. certain

Check Your Mastery

Give the Test

- Direct the class to open their workbooks to page 134.
- Explain that this Check Your Mastery activity has two parts.
- Read the directions for the first part to the class: “Read each item below. Then write the vocabulary word that best completes each sentence.” Students should pick the vocabulary word that best fits the context and write it in the blank.
- Model how to answer a question by writing the following item on the chalkboard and reading it aloud:

We _____ the exact batting averages after each inning.

- A.** probability **B.** calculate **C.** estimation

- Ask students to choose the vocabulary word that best completes the sentence (B). Guide them to explain their choice by discussing the context clue they used.
- Read the directions for the second part of the activity: “Read the passage below. Then select the vocabulary words that best fit the context. Write the words in the blanks. Use each vocabulary word only once.” Tell students that they will choose one of three vocabulary words to fill in each blank.
- Model how to fill in the blank by writing the following item on the chalkboard and reading it aloud:

There is only a 5 percent _____ (*certain, estimation, probability*) of rain today, so it’s likely to be another sunny day!

- Ask students to choose the word that best completes the sentence (*probability*). Have them explain how they used the context clues to determine the missing word.
- Remind students to check their work after they finish this activity.
- Review the Check Your Mastery activity with the class.
- Have students explain how they used the Word Learning Tip and Vocabulary Building Strategy to help them find the correct answers.