Starfall
Kindergarten
MATHEMATICS

Troublesome Teens

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Troublesome Teens

Week 12

Week 12 Summary

The children will be introduced to the numbers 17, 18, and 19, the last of the "troublesome teens." They will learn about estimations and making smart guesses. The children will also:

- Check their estimates by counting the objects
- Learn to distinguish "smart guesses"
- Measure using nonstandard measurement units
- Answer "Number Riddles"
- Act out number stories

Preparation

DAY 1

No additional preparation is needed.

DAY 2

You will need two large empty clear plastic jars (pickle or peanut butter) of the same size. Place 10 cubes in one jar and 18 in the other. Create an Estimation Chart similar to the one pictured. Save the chart after today's lesson for reference on **Day 3**.

You will need two sets of Number Cards 10 – 17.

Jar	Estimation	Actual
1		
2		

DAY 3

Prior to today's Magic Math Moment, read the introduction to *Estimate with Backpack Bear* to determine how best to use the book.

Reference the estimation activity and chart from **Day 2** as you introduce *Estimate with Backpack Bear* by Pam Ferguson. Plan to read the poem on page 3 and do a few of the activities, being sure to discuss with the children how they arrived at their estimates.

Note: *Estimate with Backpack Bear* is not meant to be read from cover to cover in one sitting. Instead use the book during transitional periods to continue to practice estimation skills throughout the school year.
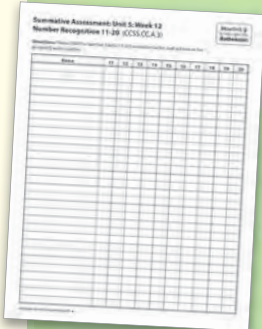
DAY **4**

In today's Magic Math Moment you will introduce *I Can Count to…* by Brandi Chase.

Due to the difficulty for many children of the concept of teen numbers, revisit this book as often as possible throughout the school year in order to review.

You will need 6 Bingo cards and several counters, pennies, or Bingo chips to demonstrate how to play Bingo.

You will also need a set of Number Cards 1–20.

DAY **5**

Activity Center 1 — Navigate classroom computers to *Starfall.com.*

Activity Center 2 — The children will need a "A Walk in the Park" game board, playing pieces, and a set of Number Cards 1-20.

Activity Center 3 — The children will use Bingo cards and several counters, pennies, or Bingo chips to play Bingo. They will also need a set of Number Cards 1–20.

Activity Center 4 — Prepare materials for this week's Teacher's Choice Activity.

Summative Assessment — The children will complete *Backpack Bear's Math Workbook #1* page 45, "Dot-to-Dot" 1-20.

To perform this week's Summative Assessment you will need a set of Number Cards 11-20 and a Summative Assessment Checklist for Unit 5, Week 12.

Summative Assessment
Unit 5 - Week 12

Looking Ahead

In preparation for the next unit, you will need the following items:

- Wooden or plastic three-dimensional shapes (**Weeks 13** and **14**)
- A container of connect cubes for each table of children (**Week 13**)
- Objects representing three-dimensional shapes: *cone, cube, rectangular prism, cylinder, pyramid,* and *sphere* (**Week 13**)
- Small marshmallows and toothpicks to construct 3-D shapes (**Week 14**)

	DAY ①	DAY ②
Daily Routines	• Calendar • Place Value • Weather • Hundreds Chart • Number Line • Count coins to match the date	
Magic Math Moment	Smart guesses	Smart guesses (estimation)

Math Concepts	Making smart guesses – realistic estimates
	
	Practice different ways of counting
	
	Introduce
	    The Number 17 **17**
	
	Before and after 17
	
	Representations of 17
	
	Discriminate 17
	
	Write the numeral 17
		Graph estimates and actual numbers - compare
		
		Review numbers 10 – 17
		
		Introduce
		    The Number 18 **18**
		
		Before and after 18
		
		Representations of 18
		
		Discriminate 18
		
		Write the numeral 18

Formative / Summative Assessment	List times the number 17 might be seen or used	List times the number 18 might be seen or used
Workbooks & Media	Workbook pages 37 and 38	Workbook pages 39 and 40

DAY **3**	DAY **4**	DAY **5**

- Calendar
- Weather
- Number Line
- Count coins to match the date
- Place Value
- Hundreds Chart

Learning Centers

Introduce *Estimate with Backpack Bear*	Introduce *I Can Count to …*	**1** *Starfall.com:* • Monthly Calendar • Numbers: "17-20" • Addition & Subtraction: "Word Problems" • Addition & Subtraction: "Compose and Decompose"

Make estimates and compare to actual numbers
 	
Number Riddles
 	
Introduce **19**
  The Number 19
 	
Before and after 19
 	
Representations of 19
 	
Discriminate 19
 	
Write the numeral 19
	Solve number stories by acting them out
	
	Introduce **20**
	  The Number 20
	
	Before and after 20
	
	Representations of 20
	
	Discriminate 20
	
	Write the numeral 20
		2 "A Walk in the Park" Game

		3 "Bingo"
List times the number 19 might be seen or used	List times the number 20 might be seen or used	**4** Teacher's Choice
Workbook pages 41 and 42	Workbook pages 43 and 44	**5** Complete 1-20 Dot-to-Dot Identify numbers 11-20 in random order

Magic Math Moment

Smart Guesses

Say: **Today we will learn to make smart guesses.
You make a smart guess when you don't know the exact answer,
but you use the information you have to estimate what the answer is.
I will estimate, or make a guess, about how many children there are in
our class. I think there are 100 children. Stand if you think my estimate is
correct.** The children do this.

Ask: **Is my estimate too high or too low? How do you know?**
Discuss why 100 children would not be a "smart guess."

Ask: **What if I estimate there are seven children in our class? Put your
hands on top of your head if you think that is a "smart guess." Is my
estimate too high or too low?** Discuss why this would also not be a
"smart guess."

Ask: **How could we determine exactly how many children there are in
our class? Right, we could count.** Count the children in the class and discuss
estimates that would be considered "smart guesses."

Counting & Cardinality

*B.4 - Understand the
relationship between
numbers and quantities.*

*CC.1 - Identify numerals
out of sequence.*

Estimation

*E.1 - Understand the
meaning of estimation.*

*E.2 - Make predictions
to determine
reasonable answers.*

Introduce 17

1 Introduce 17

Say: **Let's think of different ways we can count to
30.** Volunteers respond (ones, fives, tens, twos). After
each, the class counts to 30 in the manner suggested.

Remind the children that they can use the strategy of looking at the Number Line
or the Number Wall Cards. Use a pointer to touch each number as children count
in the various ways.

Say: **Today we will learn about the number 17.**

Indicate *Backpack Bear's Math Big Book,* page 34 and lead the children to discuss
the representations of 17.
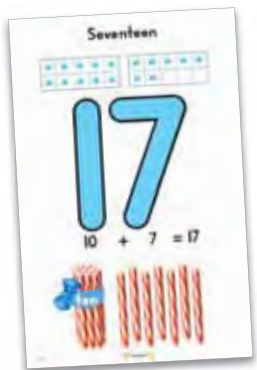
2 The Number 17

Distribute *Backpack Bear's Math Workbook #1* and instruct the children to turn
to page 37.

If you have projection capabilities, project the workbook page to use as a guide.

Note: This activity requires step-by-step teacher direction.

Complete page 37 with the children as you have with similar workbook pages.

Formative Assessment

Number Boxes for 17

The children take turns sharing times they might see or use the number 17. Write several of their responses on the board. Instruct them to turn to page 38 and draw or copy the responses into their number boxes. (Examples: 10+7=17, 17 cents, 17 miles)

Estimation

Materials

- [ ] Two clear plastic jars of the same size
- [ ] Ten cubes in one jar
- [ ] Eighteen cubes in a second jar
- [ ] Graph drawn on the board (pictured)

Essential Question: How do we estimate the amount of objects and compare them to the actual amount?

Display two clear plastic jars with cubes inside.

Ask: **Remember when we made a smart guess, or estimate, about how many children there are in our class? Today we will make a smart guess using these jars of cubes.** Indicate the estimation graph and explain that you will record the children's answers.

Jar	Estimation	Actual
1		
2		

Ask:

- **Who can make a smart guess, or estimate how many cubes there are in the first jar?** Record responses under "Estimation" Jar 1.

- **How can we check the estimates?** (Volunteers respond.) **Right, we can count the cubes.** A volunteer removes the cubes and counts them. He or she records the number under "Actual."

- **Look at this next jar. Let's do some smart thinking. Do you think this jar has more than 10 or less than 10 cubes? Why?**

- **Who can make a smart guess or estimate how many cubes there are in the second jar?** Record responses under "Estimation" Jar 2.

- **How can we check our estimate? Right, we can count the number of cubes in the second jar.** A volunteer removes the cubes and counts them. He or she records the number under "Actual."

- **How many more cubes are in the second jar?**

- **How did knowing the number of cubes in the first jar help us estimate the number of cubes in the second jar?**

Save the estimation chart for reference on **Day 3**.

Counting & Cardinality

B.4a - Say number names in order, pairing each object with one number.

B.4b - The last number counted tells the total number of objects.

CC.1 - Identify numerals out of sequence.

Number & Operations In Base Ten

A.1 - Understand numbers 11-19 are ten ones plus more ones.

Estimation

E.1 - Understand the meaning of estimation.

E.2 - Make predictions to determine reasonable answers.

Introduce 18

1 ## Number Concentration

Display the Number Cards face down in a pocket chart. The children play "Concentration" to name and match the numbers from 10 -17.

Materials

- [ ] Pocket chart
- [ ] Two sets of Number Cards 10-17
- [ ] *Backpack Bear's Math Big Book,* page 35
- [ ] *Backpack Bear's Math Workbook #1,* pages 39 and 40
- [ ] Crayons, pencils

2 Introduce 18

Say: **Today we will learn about the number 18.**

Indicate *Backpack Bear's Math Big Book*, page 35 and lead the children to discuss the representations of 18 on this page.

3 The Number 18

Distribute *Backpack Bear's Math Workbook #1* and instruct the children to turn to page 39.

If you have projection capabilities, project the workbook page to use as a guide.

Note: This activity requires step-by-step teacher direction.

Complete page 39 with the children as you have with similar workbook pages.

Formative Assessment

Number Boxes for 18

The children take turns sharing times they might see or use the number 18. Write several of their responses on the board. Instruct them to turn to page 40 and draw or copy the responses into their number boxes. (Examples: 10+8=18, 18 cents, 18 miles)

Magic Math Moment

Introduce *Estimate with Backpack Bear*

Say: **Raise your hand if you remember the activity we did yesterday when we made smart guesses to estimate how many connect cubes there were in jars.**

Indicate yesterday's estimation chart and continue:
We completed an estimation chart that showed our estimates, or smart guesses, and the actual number of connect cubes there were in the jars. Guess what! Backpack Bear is learning how to make smart guesses and estimate too!

Indicate *Estimate with Backpack Bear*. Say: **Here is a book that will help us learn to be better estimators along with Backpack Bear. The name of the book is *Estimate with Backpack Bear*. It was written by Pam Ferguson and it was illustrated by the people at Starfall.**

Read the poem on page 3 and do several examples with the children. Be sure to allow the children to discuss each page and explain the reasons for their guesses.

Note: Today's Magic Math Moment serves as a preview to *Estimate with Backpack Bear*. The book is not meant to be read cover to cover in one sitting. Instead, use the book during transition times throughout the year to practice the skill of estimation.

Counting & Cardinality

B.4a - Say number names in order, pairing each object with one number.

Number & Operations In Base Ten

A.1 - Understand numbers 11-19 are ten ones plus more ones.

Estimation

E.1 - Understand the meaning of estimation.

E.2 - Make predictions to determine reasonable answers.

Number Riddles/ Introduce 19

Materials
- ☐ *Backpack Bear's Math Workbook #1,* pages 41 and 42
- ☐ *Backpack Bear's Math Big Book,* page 36
- ☐ Crayons, pencils

1 Number Riddles (More/Less)

Say: **Today let's solve number riddles. What strategy can we use to help us solve them? Right, we can use the Number Line as a strategy to help us find the correct answers.**

Choose one volunteer to answer each riddle and another to confirm the answer by pointing to the numbers on the Classroom Number Line.

- **I am a number 1 less than 15. What number am I?**
- **I am a number that equals 12 plus 4 more. What number am I?**
- **I am a number 2 more than 11. What number am I?**
- **I am a number 1 less than 17. What number am I?**
- **I am a number 1 more than 18. What number am I?**

Say: **That's right, 19. Let's learn about the number 19 today.**

2 **Introduce 19**

Indicate *Backpack Bear's Math Big Book,* page 36 and lead the children to discuss the representations of 19.
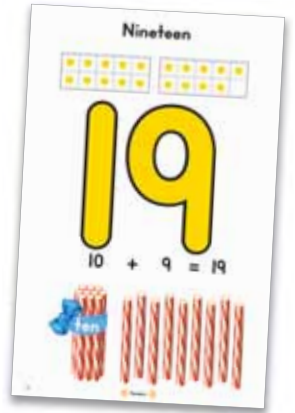
3 **The Number 19**

Distribute *Backpack Bear's Math Workbook #1* and instruct the children to turn to page 41.

If you have projection capabilities, project the workbook page to use as a guide.

Note: This activity requires step-by-step teacher direction.

Complete page 41 with the children as you have with similar workbook pages.

Formative Assessment

Number Boxes for 19

The children take turns sharing times they might see or use the number 19. Write several of their responses on the board. Instruct them to turn to page 42 and draw or copy the responses into their number boxes. (Examples: 10+9=19, 19 cents, 19 miles)

Magic Math Moment

Introduce *I Can Count to . . .*

Say: **Today we will listen to another book! It is called *I Can Count to…* It was written by Brandi Chase, and it has photos by P. Colin Hill. This is a book all about teens, so it will help us remember the teen numbers. We will listen to it several times this year so we will be experts at knowing the teens. Ready?**

Read *I Can Count to…*, stopping to discuss as necessary.

Introduce 20

1 Introduce 20

Indicate *Backpack Bear's Math Big Book*, page 37 and lead the children to discuss the representations of 20.

2 The Number 20

Distribute *Backpack Bear's Math Workbook #1* and instruct the children to turn to page 43.

If you have projection capabilities, project the workbook page to use as a guide.

Note: This activity requires step-by-step teacher direction.

Complete page 44 with the children as you have with similar workbook pages.

Formative Assessment

Number Boxes for 20

The children take turns sharing times they might see or use the number 20. Write several of their responses on the board. Instruct them to turn to page 44 and draw or copy the responses into their number boxes. (Examples: 10+10=20, 20 cents, 20 miles, 2 dimes, two bundles of 10)

Introduce the Bingo Game

- Distribute Bingo cards and a set of counters to six children for demonstration.
- Place a set of Number Cards 1-20 face down in a stack.
- The first child reveals the top Number Card to the class. Together the children identify the number.
- The children who have that number on their Bingo cards place a counter on top of the number. The other children take turns to reveal Number Cards. Play continues until all numbers are covered on a card.

The children will play Bingo during Learning Centers on day 5.

Learning Centers

1 Computer

The children explore:

- Monthly calendar
- Numbers: "17-20"
- Add & Subtract: "Word Problems"
- Add & Subtract: "Compose and Decompose"

Counting & Cardinality

B.4 - Understand the relationship between numbers and quantities.

CC.1 - Identify numerals out of sequence.

Operations & Algebraic Thinking

A.1 - Represent addition and subtraction in a variety of ways.

Number & Operations In Base Ten

A.1 - Understand numbers 11-19 are ten ones plus more ones.

Measurement & Data

MD.1 - Identify and use time measurement tools.

2 "A Walk in the Park" Game

The children play "A Walk in the Park".

They place all of the Number Cards face down in a stack, then take turns to reveal the Number Cards and move their playing pieces the corresponding number of spaces.

The first player to reach the end wins (or the children may play until all players reach the end).

Materials

☐ Number Cards 1-20
☐ 1 or 2 "A Walk in the Park" game boards
☐ Playing pieces

3 Bingo

Each child selects a Bingo card. The first child reveals the top Number Card and together the children identify the number.

The children who have that number on their Bingo cards place a counter, penny, or Bingo chip on top of the number. The other children take turns to reveal Number Cards. Play continues until all numbers are covered on a card.

Materials

☐ Bingo card for each child
☐ Counters, pennies, or Bingo chips

4 Teacher's Choice

Prepare an activity that will provide the children with an opportunity to practice a skill from this unit.

⑤ Summative Assessment: Dot-to-Dot (1-20)

Distribute *Backpack Bear's Math Workbook #1* and instruct the children to turn to page 45.

Explain to the children that they are to use pencils to connect the dots from 1 through 20 then trace over the pencil line with a black crayon. Next they should use crayons to color the picture.

Optional: The children may use their math mats to reference the numbers 1-20.

To perform this week's Summative Assessment, choose one of the children and show him or her the Number Cards 11-20 one at a time in random order. The child identifies the numbers. Record mastery on the Summative Assessment Checklist for Unit 5, Week 12. Repeat with each child in the group.

Materials

- ☐ *Backpack Bear's Math Workbook #1*, page 45
- ☐ Number Cards 11-20
- ☐ Summative Assessment Checklist for Unit 5, Week 12
- ☐ **Optional:** Math mats

11	12	13	14	15
16	17	18	19	20