DMT INSTITUTE

Developing Mathematical Thinking Institute (DMTI)

Professional Development

Curricular Resources

Assessment

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About the DMTI Targeted Activities

These DMTI Targeted Activities modules are designed to be played or completed with a partner or in small groups. These supplement the Intermediate Math Assessment and DMTI curricular materials.

The activities are intended for teachers or caregivers to play with children to build necessary math skills and math language. Each activity can be played for 10 to 20 minutes. Each additional activity in the module advances in difficulty.

IMA – Grade 3 - 6

Fluency – Skip Counting

Fluency

What's involved:

- Seeing a quantity visually growing or shrinking by a factor (e.g., twice as long, half as long)
- Understanding relationships between quantities
- Recognizing patterns

Why it matters:

- Builds flexible thinking through composition and decomposition of numbers
- Lays the foundation for algebraic thinking
- Helps students make sense of multiplicative situations which supports their ability to reason proportionally

Number Fluency: Skip Counting

Materials

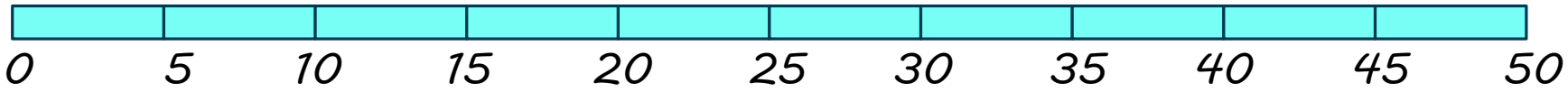
- Journal or Paper

Number Fluency: Skip Counting

Activity I

Skip Counting

1. Draw a bar model starting from 0 to 50 by 5's. (click to see example below)
2. Skip count out loud from 0 to 50 by 5's and back to 0.
3. Now, try to skip count again (forward and backward) without looking at the bar model.



Number Fluency: Skip Counting

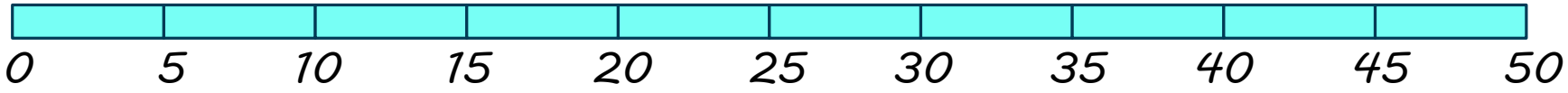
Activity I

Click here for 'What is a digit?'

Patterns (something that repeats)

1. Find and focus only on the ones digit starting with 0 and describe the pattern.
2. Will this pattern continue forever?
3. Find and focus on the tens digit starting with 0 and describe a pattern.
4. Why do you think these patterns occur?

Use a Sentence Frame: I noticed the pattern _____.

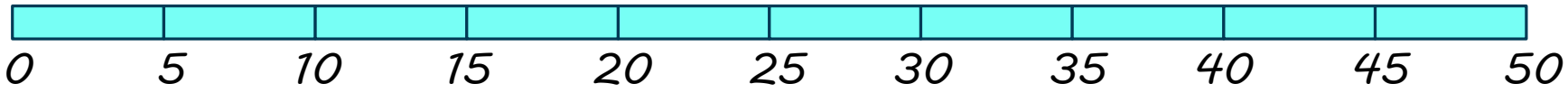


Number Fluency: Skip Counting

Activity I

Patterns (something that repeats)

1. *I noticed the pattern in the ones digit is 0 and 5.*
2. *And, yes, this pattern will continue forever.*
3. *I noticed the pattern in the tens digit is 0,0 . . . 1,1 . . . 2,2 . . .*
4. *I think the patterns occurs because 5 fits into 10 exactly twice, so the ones digit switches from 0 to 5 every other time.*



Number Fluency: Skip Counting

Activity II

Skip Counting, Bar Models, and Pattern Finding

Choose one number a day: 10, 2, 4, 8, 3, 6, 9, 7

1. Draw a bar model with 10 iterations of your unit (e.g., 10 units of 10 from 1 to 100, 10 units of 2 from 0 to 20, etc.)
2. Count out loud from 0 to the end number and back down to 0.
3. Look for patterns in the ones and then the tens digits.
4. Ask the following questions:
   a. Will this pattern continue forever?
   b. Find and focus on the tens digit starting with 0 and describe a pattern.
   c. Why do you think these patterns occur?
5. Use a Sentence Frame: *I noticed the pattern _____.*

Extension: numbers greater than 10.

Number Fluency: Digits

Digits are the symbols that are composed to make a number. This is similar to how letters are the symbols used to compose words.

How many digits are there?

Think of an answer and say it out loud first. Now click for the answer.

There are 10 digits (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)

Go to the next slide to look at a few examples.

Number Fluency: Digits

Here are few examples of digits.

For each example answer the following questions:

How many digits compose the number?

Which digit is in each place value? Ones, tens, and so on.

Click here to go back.

38

38 is a two digit number.
The digit 8 is in the ones place.
The digit 3 is in the tens place.

129

129 is a three digit number.
The digit 9 is in the ones place.
The digit 2 is in the tens place.
The digit 1 is in the hundred's place.

5

5 is a one digit number.
The digit 5 is in the ones place.

10

10 is a two digit number.
The digit 0 is in the ones place.
The digit 1 is in the tens place.

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"The Developing Mathematical Thinking Institute (DMTI) is dedicated to enhancing students' learning of mathematics by supporting educators in the implementation of research-based instructional strategies through high-quality professional development, curricular resources and assessments."

For more information contact
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