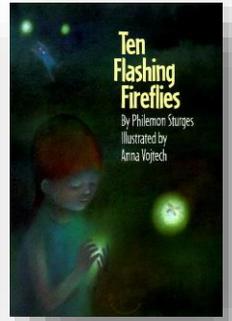


# Kindergarten

## Ten Flashing Fireflies by Philemon Sturges



### Big Ideas

- numbers tell how much and how many, and can be represented using multiple forms

### Content

- number concepts to 10
- partitioning numbers to 10

Every student should be able to show their understanding of mathematical skills and concepts, and be allowed to represent their understanding through concrete materials, pictures, numbers or words. Providing the opportunities for students to show what they know in a way that makes sense to them is a critical component of assessment.

To help address the diversity of learners in your classroom, consider the following before administering the assessment:

- provide manipulatives or other 'thinking tools'
- plan for adjustments of the tasks to meet the need of diverse learners (e.g. individual conferencing may be required to uncover their understanding)
- plan for flexible completion time (e.g. early finishers)
- plan for students who require additional adult support (e.g. students requiring scribing or digital recording).

Assessing student's thinking requires presenting questions that prompt and extend their thinking.

Consider these guiding questions:

- what evidence will I look for to know that learning has occurred?
- how can students show their understanding of the mathematical concepts?

The teacher's role is to ask questions that prompt and extend thinking by:

- providing support and guidance
- helping students build on prior knowledge
- scaffold student thinking.

### Materials:

- unifix cubes/manipulatives
- paper
- pencil

## Description of Task:

### Before

Read a book such as 'Ten Flashing Fireflies' by Philemon Sturges

- ask the students act out or model the story with a jar and unifix cubes as the story is being read
- ask students to share experiences about catching flies or other creatures
- draw a large jar on the board – identify inside and outside of the jar
- have volunteers demonstrate different ways to make 8 (partitioning with some inside a jar and some outside) using drawings or manipulatives

### During

Present the problem to the students:

**“There were 10 fireflies flashing outside.**

**Some flew in the jar and some stayed outside of the jar.**

**How many of each might there be?”**

- clarify the problem with the students, making sure that they are clear on the expectations
- explain to the students that they can use anything in the classroom to help them find solutions
- encourage them to find as many possible ways to create solutions
- ask the students to record their solutions on the paper
- as the students finish, have them explain their thinking to you
- **if necessary**, conference with the student and scribe what the student says.

### Questions to Ask

- What did you notice?
- What do you think the problem is?
- How would you explain your strategy?
- Why does this make sense?

### After

Conduct a 'SHOW AND SHARE' sessions, encouraging the students to share their strategies/thinking and to explain their reasoning to complete the task.

Conferencing with some students will help you to understand their thinking and strategies applied.

**Assessment – Choose one or more of the competencies to assess depending on your students’ needs.**

**Suggestions for Curricular Competencies Demonstration:**

<p><b>Analyzing a problem</b></p> <ul style="list-style-type: none"><li>• Use multiple strategies, including real-life concrete and pictorial contexts, to develop, construct, and apply mathematical understanding through play, inquiry and problem solving</li><li>• Estimate reasonably using whole-number benchmarks of 5</li><li>• develop mental math strategies and abilities to make sense of quantities up to 10</li></ul> <p><b>Reasoning and proof</b></p> <ul style="list-style-type: none"><li>• Use reasoning and logic to explore and make connections</li></ul> <p><b>Communicating</b></p> <ul style="list-style-type: none"><li>• Communicate in many ways (concretely, pictorially, symbolically, using simple oral or written language, using technology) to express, describe, explain, represent, and apply mathematical ideas</li></ul> <p><b>Connecting</b></p> <ul style="list-style-type: none"><li>• Visualize and describe mathematical concepts</li><li>• Connect mathematical concepts to each other and make mathematical connections to the real world</li></ul> <p><b>Representing</b></p> <ul style="list-style-type: none"><li>• Develop mathematical understanding through concrete, pictorial, and symbolic representations, using technology as appropriate</li><li>• Use technology appropriately to explore mathematics, solve problems, record, communicate and represent thinking</li></ul>	<p>“How many ways can you make 10?” Show your strategies.</p> <p>Explain how to use a benchmark of 5 to determine the total quantity.</p> <p>Explore representing and describing quantities using the ‘make ten’ strategy.</p> <p>Explore the different ways to create two parts that make a total of 10. Describe and compare the two parts you partitioned.</p> <p>Explain how you know that you still have 10 when you have two parts.</p> <p>Explain how you visualize 10 into two parts and prove that you have the same quantity.</p> <p>When might you partition a quantity into two parts?</p> <p>Draw pictures to represent the two parts to make 10.</p> <p>Explore representing and describing quantities using the ‘make ten’ strategy.</p> <p>What types of objects, manipulatives or digital technologies could you use to help solve this problem?</p>
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