

# Discussion Guide

## Discussion Guide for Module 21 Spatial Skills and Reasoning

**Module run time:** 20 minutes

**Estimated time to complete the module with discussion guide:** 45-60 minutes

Below are recommended stopping points and suggested questions to use in your group's discussion. Please feel free to follow your group's lead and discuss topics and questions that are of greatest value to the group!

### Key points:

- Early spatial skills and reasoning are part of our daily activities. They are essential for school readiness and are related to later math skills.
- Children show individual differences in spatial skills and reasoning before they start kindergarten.
- Spatial skills and reasoning are malleable. They can be improved with experience and training.

### Module synopsis:

Page 1: *Title Page – Spatial Skills and Reasoning*

Page 2: *Acknowledgments*

Page 3: *Spatial Skills and Reasoning*

### ☛ Recommended stopping point

- We discussed some of the activities that adults do every day that involve spatial skills and reasoning. What infant and toddler activities help build their spatial skills?

Page 4: *Spatial Awareness*

Page 5: *Shape Awareness*

Page 6: *Learning the Names of Geometric Shapes*

### ☛ Recommended stopping point

- Reflect on your answers to the first discussion guide question. How do the activities line up with each component of spatial awareness (shape, size, space, position, direction, and movement)? Think of ways to highlight each of these concepts during everyday play and routines.
- **Shape awareness**, the ability to recognize and identify shapes, is an important part of spatial awareness. Children learn about shapes best through experience. How can you help children learn about shapes that are part their environment? For example, a refrigerator and television are both rectangles, even though their orientation is different.
- Around age 2, children know some names for common shapes but have more difficulty recognizing non-standard shapes. Have you noticed this pattern in the children with whom you work? What are some strategies you have used to teach toddlers about non-standard shapes?

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Page 7: *Spatial Language*

Page 8: *Spatial Skills and Early Math Ability*

## ✦ Recommended stopping point

- Research shows that hearing spatial language and engaging in spatial play early is related to children's spatial skills when they are older. Do you already make a conscious effort to incorporate spatial language and play into your work with children? What are some times throughout the day when you can add more?
- Preschoolers' block assembly skills and spatial awareness relate to their early math skills. How does the task in the block assembly research study teach children about shape, size, space, position, direction, and movement? How could you modify this task to use as a classroom activity?

Page 9: *Individual Differences*

Page 10: *Improving Spatial Skills*

Page 11: *Spatial Skill Development*

Page 12: *Math and Me: Spatial Skills*

## ✦ Final discussion points

- Take a moment to think about the types of activities you encourage for boys and girls. Are they the same? Sometimes we encourage different skills in boys and girls without even realizing it. How can we encourage girls and boys to engage in activities that support spatial skill development?
- We can improve spatial skills through training and practice. What are some ways to encourage more spatial thinking around the classroom? How can you support parents in encouraging more spatial thinking at home?
- How does spatial play help prepare a child for success in math and school?

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To learn more about the development of children's spatial skills and reasoning, take a look at these resources:

[Erikson Institute Early Math Collaborative | Shape](#)

[Erikson Institute Early Math Collaborative | Spatial Relationships](#)

[High Five Mathematize | An Early Head Start and Head Start Math Resource Guide](#)

[Learning and Teaching with Learning Trajectories | Early Math - Birth to Grade 3](#)

[Mathematica | Developing Math Skills in Early Childhood](#)

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[National Association for the Education of Young Children | Math](#)

[Too Small to Fail | Let's Talk About Math](#)

[Vroom | Math Activities](#)

[Zero to Three | Let's Talk About Math](#)

We are constantly working to improve our materials. Do you have suggestions about topics to add to this guide? Did your group discuss something we didn't suggest? We'd love to hear from you! Please email your thoughts to us at [ilabsout@uw.edu](mailto:ilabsout@uw.edu).

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