
Pair Work: Think/Pair/Share

MATHEMATICS

In this strategy, students individually consider an issue or problem and then discuss their ideas with a partner.

Purpose

Encourage students to think about a question, issue, or reading, and then refine their understanding through discussion with a partner.

Payoff

Students will:

- reflect on subject content.
- deepen understanding of an issue or topic through clarification and rehearsal with a partner.
- develop skills for small group discussion, such as listening actively, disagreeing respectfully, and rephrasing ideas for clarity.

Tips and Resources

- Use Think/Pair/Share in all math strands for any topic.
- Use it to help students read and understand a problem e.g., direct students to complete a KMWC (Know/Model/Words/Cross out) chart (see **Most/Least Important Idea(s) or Information**) then share their work with a partner.
- Once a problem has been understood, this strategy can be used to help in the problem solving process (see Student/Teacher Resource, *Think/Pair/Share – Sample Starters*).
- This strategy can be used for relatively simple questions and for ones that require more sophisticated thinking skills, such as hypothesizing. Use it at any point during a lesson, for very brief intervals or in a longer time frame.
- Use it to activate prior knowledge, understand a problem, or consolidate learning.
- Take time to ensure that all students understand the stages of the process and what is expected of them.
- Review the skills that student need to participate effectively in think/pair/share, such as good listening, turn-taking, respectful consideration of different points of view, asking for clarification, and rephrasing ideas.
- After students share in pairs, consider switching partners and continuing the exchange of ideas.
- See Student/Teacher Resource, *Think/Pair/Share – Possible Starters*.
- See other strategies, including **Take Five** and **Discussion Web** (Oral Communication strategies in *Think Literacy: Cross-Curricular Approaches, Grades 7-12*) for ways to build on this strategy.

Teaching Reading in Social Studies, Science, and Math, pp. 266-269.
Beyond Monet, pp.94, 105.

Further Support

- Some Students may benefit from a discussion with the teacher to articulate their ideas before moving on to share with a partner.

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| What teachers do | What students do |
|--|---|
| <p>Before</p> <ul style="list-style-type: none"> Choose a teachable moment during the class where the process of reflection and shared discussion would bring deeper understanding, and insert a brief Think/Pair/Share activity into the lesson at that point. Consider the social and academic goals for the Think/Pair/Share activity, and plan for pairing of particular learners that would further those goals. | <ul style="list-style-type: none"> Read the text, if the Think/Pair/Share is based on information and ideas from a reading selection. |
| <p>During</p> <ul style="list-style-type: none"> Ask students to spend several minutes thinking about and writing down ideas. Set clear expectations regarding the focus of the thinking and sharing to be done. Put students in pairs to share and clarify their ideas and understanding. Monitor students' dialogue by circulating and listening. | <ul style="list-style-type: none"> Formulate thoughts and ideas, writing them down as necessary to prepare for sharing with a partner. Practise good active listening skills when working in pairs, using techniques such as paraphrasing what the other has said, asking for clarification, and orally clarifying their own ideas. |
| <p>After</p> <ul style="list-style-type: none"> Call upon some pairs to share their learning and ideas with the whole class. Possibly extend the Think/Pair/Share with a further partner trade, where students swap partners and exchange ideas again. Consider adding a journal writing activity as a productive follow-up to a Think/Pair/Share activity. | <ul style="list-style-type: none"> Pinpoint any information that is still unclear after the pair discussion, and ask the class and teacher for clarification. |

Notes

Think, Pair, Share – Sample Starters

Sample Starters for Individual Thinking before Pairing:

- Think of three things you know about ____ . (e.g., scientific notation).
- Take about 5 minutes to jot down things you remember about ____ . (e.g., triangles).
- Write a definition for ____ . (e.g., rhombus).
- What is the difference between ____ and ____ ? (e.g., the instructions *solve* and *simplify*)
- What is the same and what is different between ____ and ____ ? (e.g. mean and median)
- Think about different ways that you can ____ . (e.g. model the addition of -7 and +5)
- You are going to look at a diagram on the overhead for a few moments. Then I will cover the diagram and ask you to individually write things that you remember about the diagram.
- Read the set of instructions and highlight any that you don't understand.
- Read the set of instructions and reword them so they would be easier for a Grade __ student to understand.
- Think about the activities we did in class over the last few days. Summarize the mathematics concepts that you learned and state the concepts that are still unclear to you.

Sample Think/Pair/Share Process for Problem Solving:

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| <p>Step 1: Think</p>  | <p>Individually think about the following (3-5 minutes):</p> <ul style="list-style-type: none"> • What information do you need to solve the problem? • What information do you already know? • What tools and strategies could you use? • What questions do you need to ask your group? |
| <p>Step 2: Pair</p>  | <p>With a partner, jot down ideas to help you get started with the problem (2-3 minutes). You may use any of the tools provided in the classroom, including calculators to help with estimating.</p> |
| <p>Step 3: Share</p>  | <p>Take turns sharing ideas in a larger group (3-4 minutes).</p> |
| <p>Step 4:</p> | <p>Decide on the first strategy your group would like to apply to solve the problem. Record other possible strategies. You may want to revise your plan as you work through the problem.</p> |
| <p>Step 5:</p> | <p>The person with _____ shares your favoured strategy with the whole class.</p> |

...adapted from TIPS: Section 4 – TIPS for Teachers, page 8