

PRACTICE TASK: WHAT'S THE CONNECTION?

Adapted from the lesson, Quad Math from <http://nrich.maths.org/6998/note>

STANDARDS FOR MATHEMATICAL CONTENT

MCC3.G.1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

STANDARDS FOR MATHEMATICAL PRACTICES

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Students have begun to learn more about quadrilaterals and their properties. In this task, students will use what they have learned about shapes to make a set of cards that are related to each other in a similar way.

ESSENTIAL QUESTIONS

- What are some things you have learned about quadrilaterals?
- How do you know the difference between a square, a rectangle, a trapezoid, and a rhombus?
- What might an irregular shaped quadrilateral look like?

MATERIALS

- A Rule card for every group of 4 players
- Page 1 and 2 for every group of 4 players
- Math Journal

GROUPING

Group of 4 – a 5th person could be in the group as a rule keeper or communicator for the group.

TASK DESCRIPTION

Students must follow the rules on the Rule Cards to play this game. They will help each other to form a group of 4 cards that relate to each other. To play, students will get into groups of 4. If there is a need, there can be a 5th person in each group who will act as the Rule Keeper or the communicator at the end. Distribute a rule card and the 16 cards to each group of players. Within the groups, distribute the 16 cards so that each player gets 4 cards. Place all cards face up and in front of each player where all players can see the cards. REMEMBER, the rules of the game include: no talking during the game, players can only give cards (not take), must have 2 cars in front of them at all times, and the team is successful when all 4 players have 4 cards that relate to each other. The goal of the game is that students will need to end up with a set of four cards in front of them that are related to each other in a similar way. The task is only successful if everyone on the team has completed their set.

For the teacher information only: the 16 cards consist of 4 squares, 4 rectangles, 4 trapezoids, and 4 irregular shaped quadrilaterals. Some groups may see a set consists of having 1 of each type of shape while others may see a set as having only one type of set. Either is correct **IF** students are able to explain their set.

When complete, have students write in their math journal their experience of the activity.

FORMATIVE ASSESSMENT QUESTIONS

- How are your cards related?
- What could have made this task easier?
- Is there another way to form a set with these cards?
- Did you all agree on the set to begin with or did you have to trade cards several times?
- What if a rhombus had been added to the deck of cards? Could you have still formed a set?

DIFFERENTIATION

Extension

- Create a similar game using more shapes, including rhombus and kite.

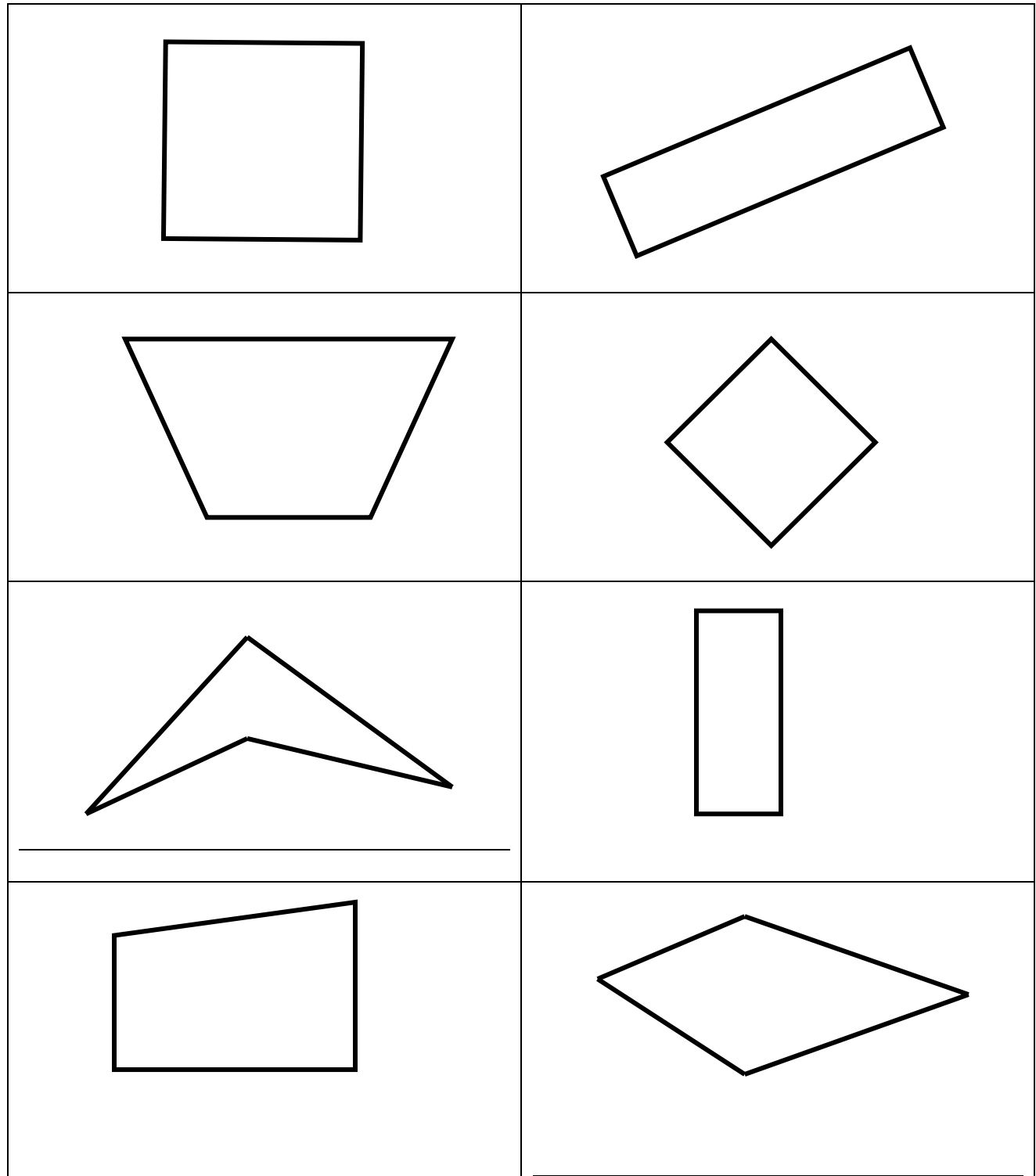
Intervention

- If student struggled to create sets that were related, have them talk about the cards and sort into groups based on their discussions. Make a chart to help the struggling student start to see the differences in the shapes.

WHAT'S THE CONNECTION? Rule Cards

<u>Rules</u> You must not talk or use sign language. You can <u>give</u> cards to someone else. You must always have at least two cards in front of you. You <u>must not take</u> cards. You are only finished when everyone has a set of matching cards.	<u>Rules</u> You must not talk or use sign language. You can <u>give</u> cards to someone else. You must always have at least two cards in front of you. You <u>must not take</u> cards. You are only finished when everyone has a set of matching cards.
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WHAT'S THE CONNECTION? Playing Cards Page 1



WHAT'S THE CONNECTION? Playing Cards Page 2

