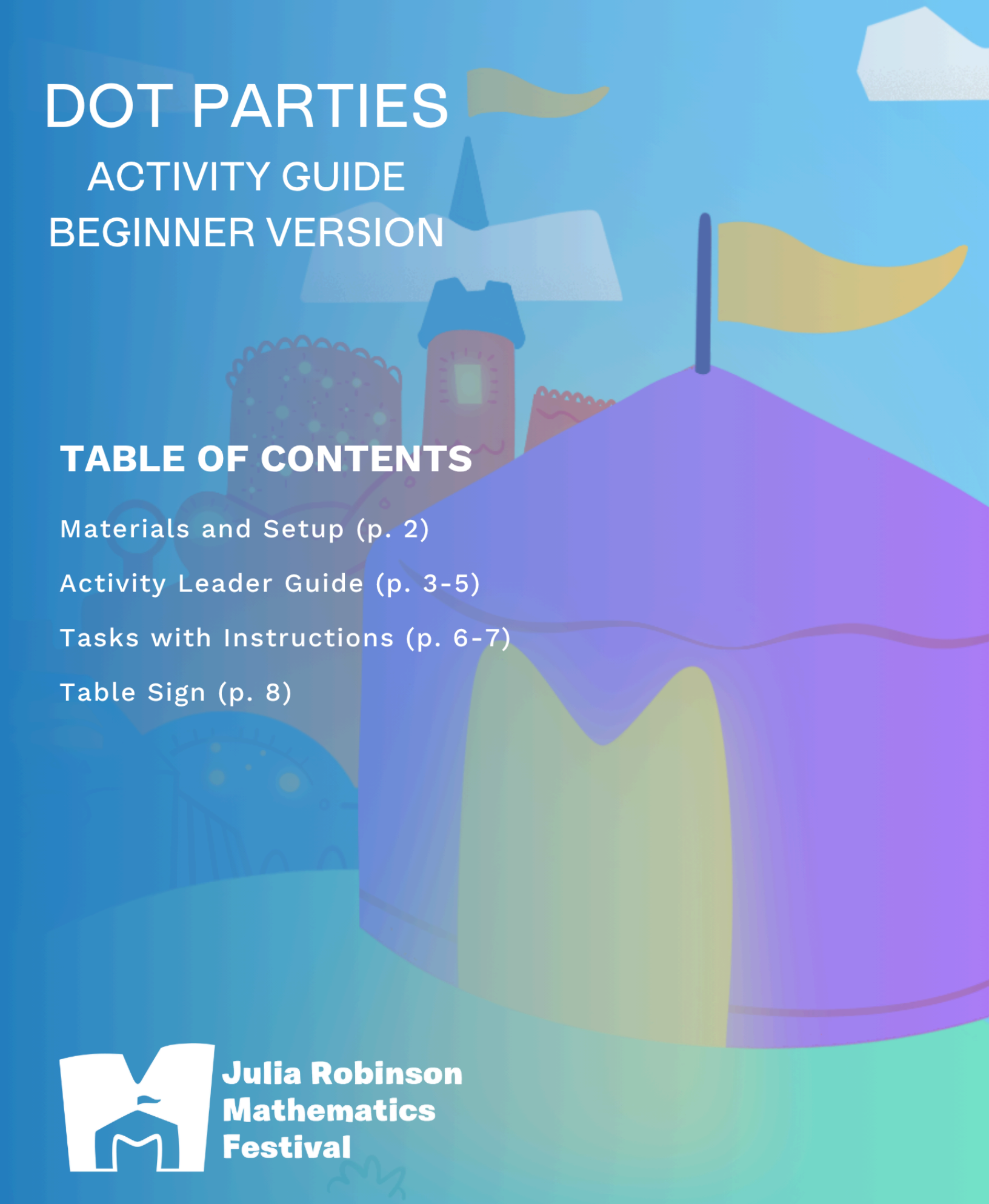
DOT PARTIES

ACTIVITY GUIDE
BEGINNER VERSION



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Julia Robinson Mathematics Festival

Materials and Setup

Per table (assuming 5 students per table), you will need:

Per Table	Material Preparation	
5 copies of Tasks	2 pages each in dry erase sleeves *can be printed double-sided*	p. 6-7
1 copy of Table Sign	1 page *print on cardstock for sturdiness*	p. 8
5 dry erase plastic sleeves		
5 dry erase markers		
5 dry erase marker erasers		

Per Table	Purchasing Materials		
dry erase combo	30 piece set for $22.53		Set comes with 30 plastic sleeves, 30 markers, and 4 erasers.
dry erase markers	pack of 72 for 9.99		If you need just the markers.

What does "beginner version" mean?

This version of Dot Parties was created with PreK - 2nd grade students in mind. However, "beginner" does not mean "easy," and this version of Dot Parties can be an effective way to engage students of any age who:

- Have strong math anxieties
- Don't feel confident with math or math puzzles
- Have learning differences
- Want a gentler start to the activity

Older students and parents at our events often engage with this beginner version and move on to the regular version when they feel ready.

Objective

Create as many groups as you can that contain the indicated number of dots.

Materials

Each Dot Parties table should be prepped for 5 stations.
Each station needs:

1. Dot Parties tasks in dry erase sleeves.
2. 1 dry erase marker and eraser.

How to Play

Introduce the activity without overexplaining it and without telling what strategies students might want to use. As much as possible, avoid giving away answers. Students should be encouraged to explore, experiment, and learn from their mistakes.

1. Use the first puzzle to demonstrate how to create the groups.
2. Have the student create their own groups.

Standards

1. Make sense of problems and persevere in solving them. CCSS.MP1
2. Construct viable arguments and critique the reasoning of others. CCSS.MP3
3. Model with mathematics. CCSS.MP4
4. Look for and make use of structure. CCSS.MP7

Asking Good Questions

1. Ask questions about confidence.
    a. When a student asks you “Is this right?”, instead of saying “yes” or “no” right away, ask them how confident they are in their answer. Here are some examples:
        i. “Maybe. What do you think? How confident are you?”
        ii. “On a scale of 1-5, how confident are you in your answer?”
    b. If a student is not confident in their answer, follow up by asking “What would help you feel more confident in your answer?” or “Why do you not feel confident?” This helps you determine how best to help the student through their explorations.

2. Ask students about choices.
    a. When a student is stuck or shows you a wrong answer, instead of jumping in and showing the student the correct answer, start by asking about the choices that the student made along the way. Here are some suggested steps to follow:
        i. Start from the beginning.
        ii. Ask students to show you what they’ve tried so far.
        iii. When the student gets to a point where they have different choices, ask the student “What other choices can you make here?”
        iv. Have the student make a different choice and try to solve the puzzle. This helps the student see that they have the power to make different choices during an activity, and they’ll start to do this on their own in the future.
        v. If you’re familiar with the puzzle or a particular solution, stop the student only when a different choice will help them get to the solution. This will help them feel successful faster without you giving away too much of the answer.

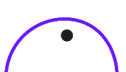
3. Ask students about strategies.
    a. If a student is getting into the activity and has been doing it for a while, ask the student if there are any strategies they’ve come up with to help them solve the puzzle or win the game.
    b. Follow up by asking if they think their strategies will work for all puzzles and/or larger puzzles, more complex puzzles, etc. Have the student explore more complex puzzles to test out their strategies.
    c. This is a great way to encourage a student to dive deeper into an activity and to start looking for patterns, structure, and proofs.

Answers

Puzzles have more than one solution, so answers will vary.

In Puzzles 3 and 5, you cannot use all of the dots. The goal is to use as many dots as you can.

Puzzle #1



Draw groups with **3 dots** in each group.

Puzzle #2

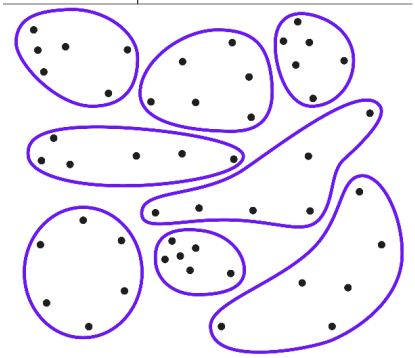
Draw groups with **4 dots** in each group.

Puzzle #3

Draw groups with **5 dots** in each group.

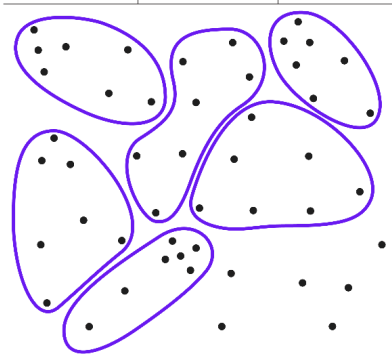
Puzzle #4

Draw groups with **6 dots** in each group.



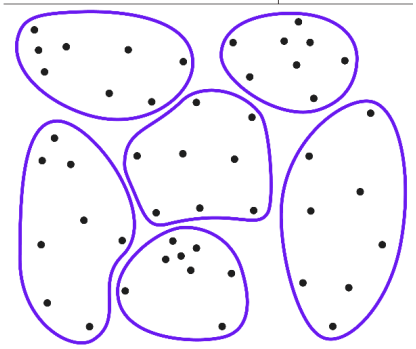
Puzzle #5

Draw groups with **7 dots** in each group.



Puzzle #6

Draw groups with **8 dots** in each group.



Dot Parties

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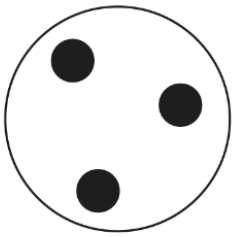
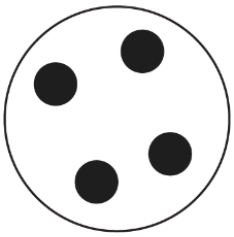
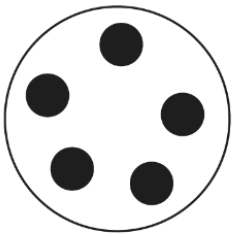
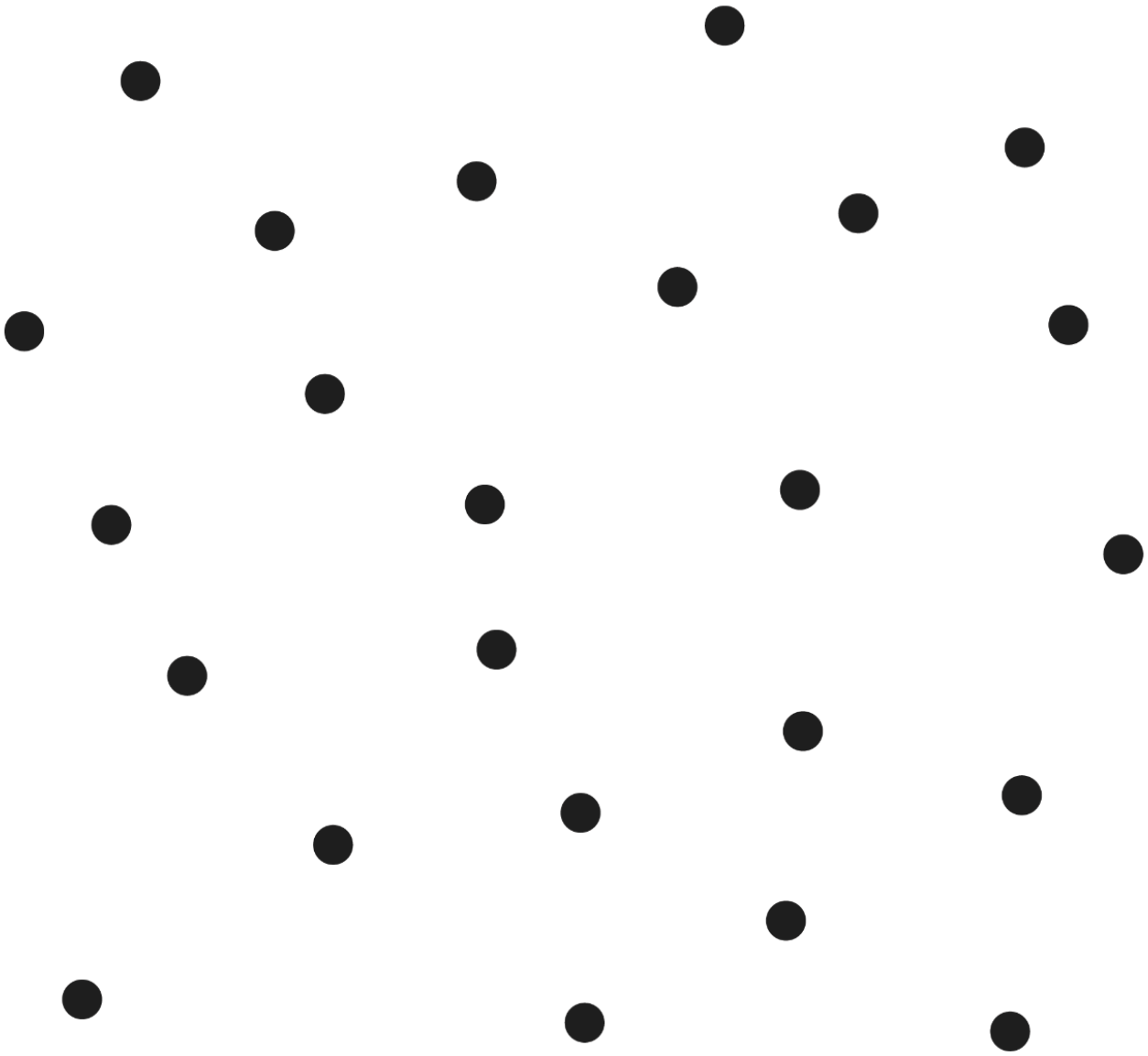
Puzzle #1	Puzzle #2	Puzzle #3
		
Draw groups with **3 dots** in each group.	Draw groups with **4 dots** in each group.	Draw groups with **5 dots** in each group.



Dot Parties

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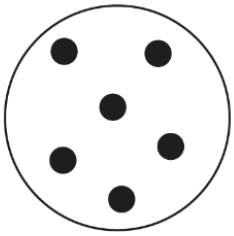
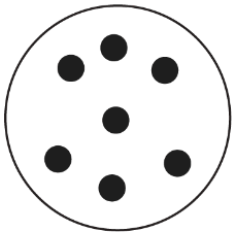
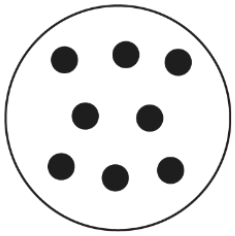
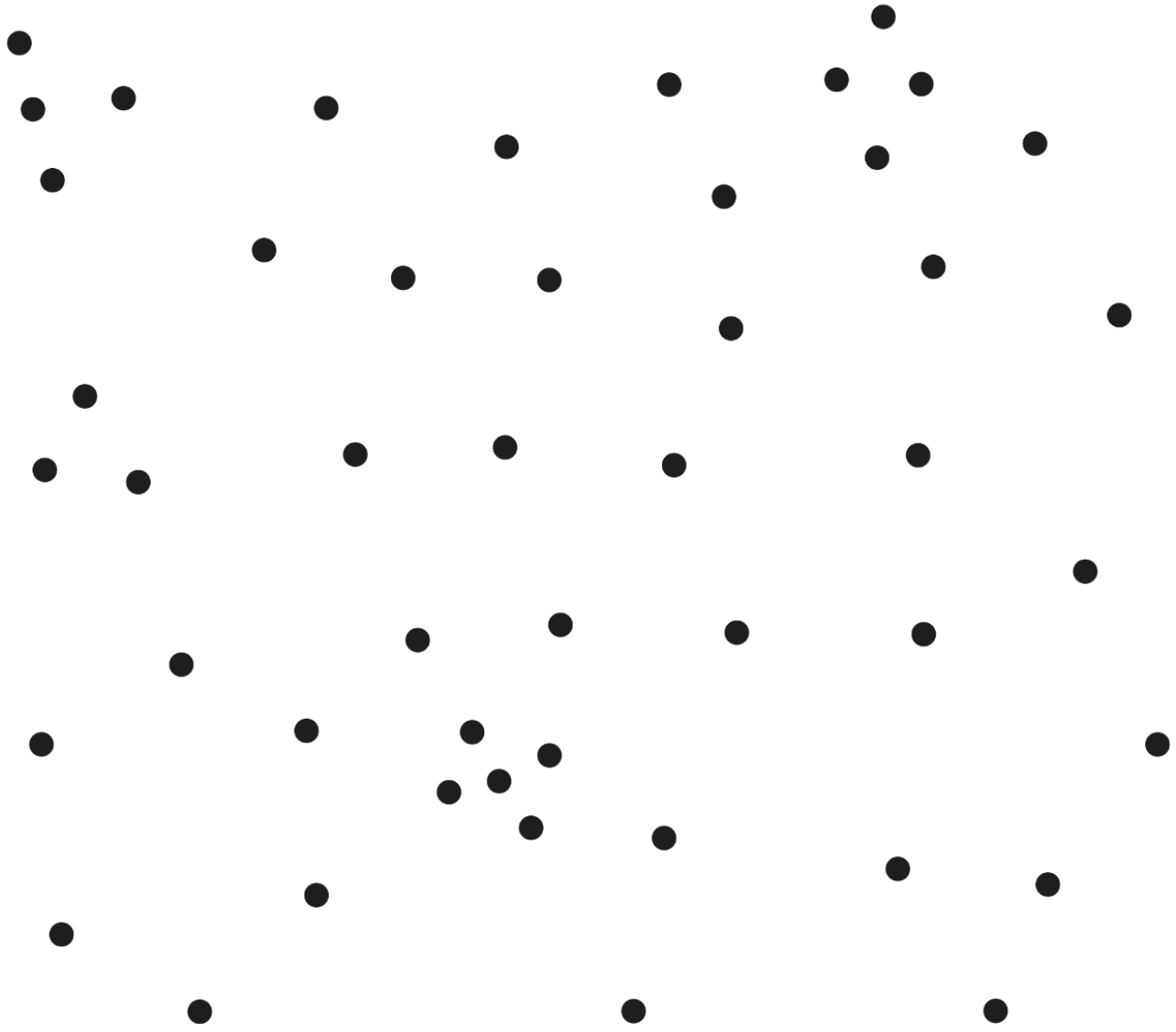
Puzzle #4	Puzzle #5	Puzzle #6
		
Draw groups with **6 dots** in each group.	Draw groups with **7 dots** in each group.	Draw groups with **8 dots** in each group.



Play for free at
jrmf.org/puzzle/dot-parties

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