

# Information Barrier Game: Interactive Partner Activity

GRADES 3-5

Math	
<b>AREA OF FOCUS</b>	<p><b>I</b> Interdependence of Mathematical Content, Practices, and Language</p> <p><b>III</b> Mathematical Rigor Through Language</p>
<b>GUIDELINE</b>	<p><b>3</b> Regular and varying opportunities to learn, reflect upon, and demonstrate learning of mathematics using a variety of modes and forms</p> <p><b>9</b> Guidance for facilitating mathematical discussion and co-construction of meaning</p>
<b>SPECIFICATIONS</b>	<p><b>3a</b> Opportunities to deepen and extend learning through varied modes: speaking, listening, reading, and writing</p> <p><b>9b</b> Purposes for communication between students</p> <p><b>9c</b> Encouragement for equitable participation and risk-taking in conversations</p>

## Description of resource and intended audience:

This game partners students to solve a math problem in which there is an information gap, so each student needs the other's information. The game requires reading, speaking, and listening skills. This game may also be useful for higher grade mathematics with students at lower English proficiency levels.

Rationale: Students must purposefully communicate using mathematical language to share mathematical content that is needed to solve a problem. Peers can support each other in comprehending word problems and writing equations using the information they share. This activity can be used for the development of strategies for communication such as clarifying, rewording, questioning, and giving instructions. It also provides an opportunity to reinforce mathematical vocabulary through

**Materials needed:** Partner sets (in envelopes labelled 'A' and 'B') of math word problems requiring mathematical operations appropriate for the grade level. Each partner has part of the word problem and needs the information from his/her partner in order to solve the problem together. Pencils and papers, or individual whiteboards and markers



**Approximate time needed:** About 3–5 minutes per word problem set, totaling about 20 minutes for one round of modeling plus 5 rounds of student partner work.

**Instructions:**

1. Teacher should first model the use of the game with one of the students in front of the whole class. The following modeling activity could be used with the lower grades, but an appropriate model should be created depending on grade level and mathematical concepts being taught. Together, they open the envelope with the first model word problem and take out the two 3x5 cards inside. Here is what each card looks like:

Partner A	Partner B
<ol style="list-style-type: none"><li>1. <b>20</b> ladybugs are having a picnic at the park.</li><li>2. Along come ____ more ladybugs to join them.</li><li>3. How many ladybugs are now at the picnic?</li></ol>	<ol style="list-style-type: none"><li>1. ____ ladybugs are having a picnic at the park.</li><li>2. Along come <b>16</b> more ladybugs to join them.</li><li>3. How many ladybugs are now at the picnic?</li></ol>

2. Teacher and student each read their cards individually silently in front of the class. Teacher says, *“This looks like an addition problem, but I can’t solve this problem by myself. There is something I don’t know.”* Teacher asks student, *“Can you solve this problem by yourself?”* Student will answer no.
3. Teacher says, *“Let’s ask each other information about our cards and see if we can solve the problem together. I will ask you questions about your card, and you will answer me.”* After Partner B asks partner A for information, they write down the information Partner B needed on paper or individual whiteboard.
4. Teacher says, *“You will ask me information from my card out loud and then I will answer you.”* After Partner A asks for information, they write down the information Partner A needed on paper or individual whiteboard.
5. Teacher says, *“Let’s read Line 3 from our cards together and then we can solve the problem.”* After they read together, the teacher elicits from the class why the information the partners asked for was needed to solve the problem. They then write an equation and solve the problem on paper or individual whiteboard.
6. As the final part of the modeling, the teacher then asks the student to read out loud the whole card now, with the information complete.
7. Repeat the game, using additional sets/envelopes with similar word problems that students will solve in pairs. By passing around the envelopes after each turn, student partners can solve up to 5 word problems before the end of the game. Be sure that each pair has a way to document their problem solving on paper or whiteboard.



## Works Cited

Adapter: Linda Carstens, ELSF math coach. Game modified for use in math from Gibbons (2002), *Scaffolding Language, Scaffolding Learning*. Portsmouth, NH: Heinemann Publishers