

POLAR PROBLEMS



For grades 3-5; Groups of 2-6

Materials Needed:

Polar Problems game board

A game piece for each player (cut from bottom of page)

1 die

Game cards

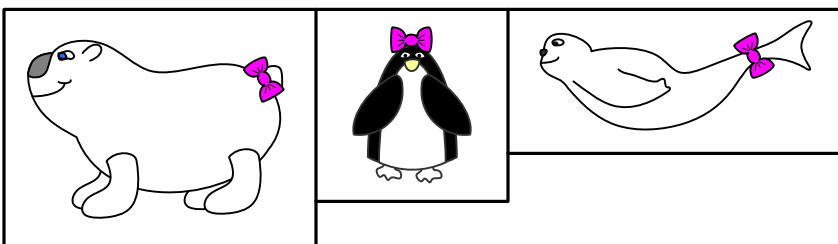
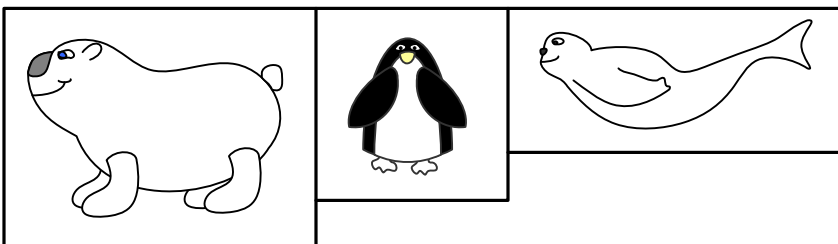
How to Construct:

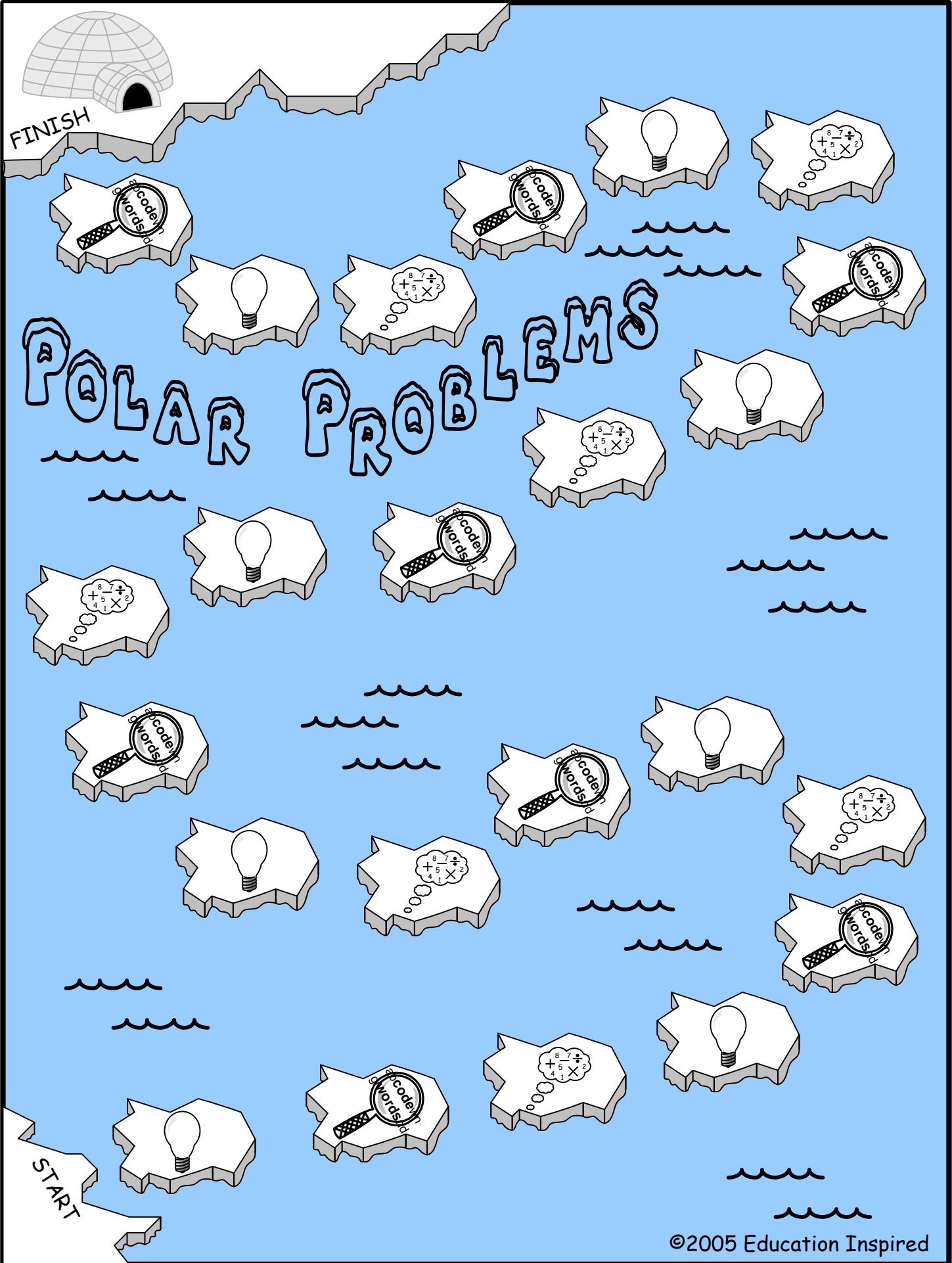
1. Print the game board and instructions. Print the cards double-sided (front to back).
2. Tape the board on the front of a manila folder. Cut out the cards and game pieces.
3. Laminate the game pieces, cards, and manila folder (with the folder open).
4. Slice the laminate on the opening of the folder with a pair of scissors. Now the folder will be laminated, but you will also be able to open it.
5. Use the folder to hold the pieces and cards. When you are ready to play, just grab the folder and a die and you will have everything you need.

How to Play:

1. Each player choose a game piece and place it on the word "START." Put the game cards face up in a stack.
2. In turn, roll the die and move that number of spaces. Pick up the top card in the stack. The person to the left of the player may read the card aloud to the player.
3. The answer must correspond to the space landed on. The picture determines the question to be answered. See the separate key for an explanation of the pictures.
4. Answers are on the back of the cards. If the answer is correct, the player may stay on the space landed. If the answer is incorrect, the player must go back to the space on previously. Then turn is over and the next player may roll the die.
5. Play continues until one player reaches the "FINISH."

Game Pieces





POLAR PROBLEMS



multiplication and division

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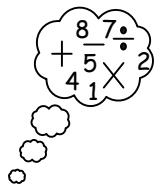
What is the code word? What does it mean to do? Is there more than one code word?



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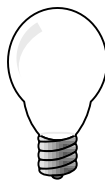
How can the problem be solved? (operations and strategies)



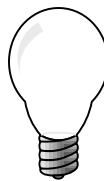
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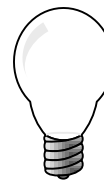
How can the problem be solved? (operations and strategies)



What is the answer?



What is the answer?



What is the answer?

Kamil studied for 3 hours each day for 4 days. How many hours did Kamil study?

Heather had 20 stuffed animals. She put them on a her bookcase, with an equal number of animals on each shelf. She used 4 shelves. How many animals did Heather put on each shelf?



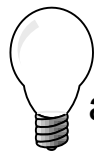
"Equal" means to divide.



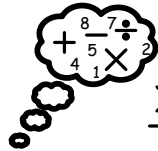
"Each" before the question means to multiply.



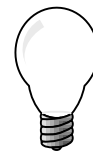
$$\frac{20}{\div 4}$$



5 animals



$$\frac{4}{\times 3}$$



12 hours

Lucero is reading a good book from the school library. She read 4 chapters in one hour. How many chapters could she read in 2 hours?

When Heidi parked her bicycle in the last open space on the bike racks at school, she notices there were 12 racks holding 8 bikes each. How many total bikes were parked in the racks?

George has 4 bunches of bananas. Each bunch has 3 bananas. How many bananas does George have?

Anthony has 4 boxes. Each box contains 6 pears. How many pears does Anthony have?

Tim has 4 bags of M&Ms. There are 5 M&Ms in each bag. How many M&Ms in all?

Josef has 3 times the amount of pencils as Lori. Lori has 6 pencils. How many pencils does Josef have?

Sara drinks 2 glasses of milk in one day. In a week, how many glasses of milk does she drink?

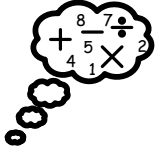
Erin had 7 flowers. There are 8 petals on each flower. How many petals are there in all?



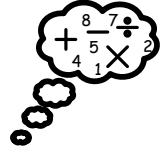
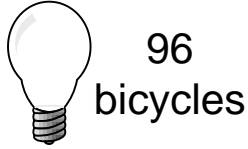
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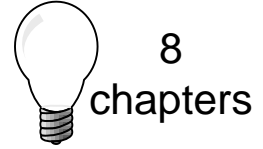
"One" before the question means to multiply.



$$\begin{array}{r} 12 \\ \times 8 \\ \hline \end{array}$$



$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$



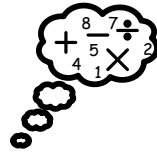
"Each" before the question means to multiply.



"Each" before the question means to multiply.



$$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$$



$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$



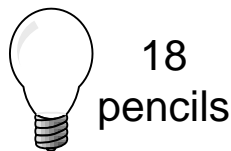
"Times" means to multiply.



"Each" before the question means to multiply.



$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$



$$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$$



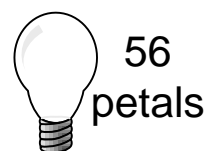
"Each" before the question means to multiply.



"One" means to multiply.



$$\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$$



$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$$



| | |
|--|--|
| <p>Rachel ran 40 miles. It took her 5 hours. If she walked the same speed the whole way, how far did she run in one hour?</p> | <p>Debbie bought 3 pizzas and spent \$15 total. If each pizza cost the same amount, how much did one pizza cost?</p> |
| <p>Sarah has 20 pencils and she gave an equal number to each of her friends. Sarah has 5 friends. How many pencils does each of her friends get?</p> | <p>Bobby made \$96.00. If he worked 12 hours, how much money did he make each hour?</p> |
| <p>Tom bought 10 muffins. He spent \$20. If each muffin cost the same amount, how much does one muffin cost?</p> | <p>There were 16 frogs in the pond on 4 lily pads. There were an equal number of frogs on each lily pad. How many frogs were on each lily pad?</p> |
| <p>There were 36 students in the class. The teacher divided the students into 4 equal groups. How many students were in each group?</p> | <p>Mark had 48 baseball cards. He put them in 6 equal stacks. How many cards were in each stack?</p> |



"One" in the question means to divide.



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$$\begin{array}{r} 15 \\ \div 3 \\ \hline \end{array}$$



$$\begin{array}{r} 40 \\ \div 5 \\ \hline \end{array}$$



"Each" in the question means to divide.



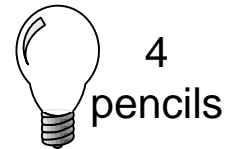
"Equal" means to divide.



$$\begin{array}{r} 96 \\ \div 12 \\ \hline \end{array}$$



$$\begin{array}{r} 20 \\ \div 5 \\ \hline \end{array}$$



"One" in the question means to divide.



"Equal" means to divide.



$$\begin{array}{r} 20 \\ \div 10 \\ \hline \end{array}$$



$$\begin{array}{r} 16 \\ \div 4 \\ \hline \end{array}$$



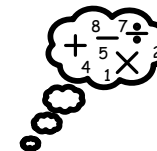
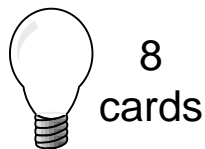
"Equal" means to divide.



"Divided" means to divide.



$$\begin{array}{r} 48 \\ \div 6 \\ \hline \end{array}$$



$$\begin{array}{r} 36 \\ \div 4 \\ \hline \end{array}$$

