

# The Cat, the Mouse, and the Magic Beans



Plan a strategy to get three items across the river safely.

## What you need

Models or pictures of:

- Cat
- Mouse
- Bag of magic beans
- Boat
- Stream

Paper  
Markers

## What to do

1. You have a cat, a mouse, and a bag of magic beans that you need to carry across the river. You have a very small row boat and you can only carry one item plus yourself in the boat at a time.
2. You also have to be very careful because if you leave the cat alone with the mouse, the cat might chase the mouse.
3. If you leave the mouse alone with the magic beans it may get hungry and eat them.
4. If the mouse eats the magic beans it will grow so large that it won't fit in the boat at all.
5. How can you get all three items across the river?
6. Use play coins to help you keep track of the trips across the river. Pay a coin each time you go across.

## What to ask

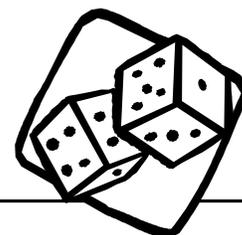
- How many times will you have to cross the river to get all three items across?
- Try the problem another way to see if you can shorten the number of trips you have to take.
- What is the least number of times you have to cross the river to get everything across?



## Did you know?

Conditions such as the ones in this story often come up in real life. There are times when we must plan the best strategy given limitations. For instance, if you are planning a garden, certain plants can't be in direct sunlight while others need more water. Some plants cannot be planted near other types of plants.





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## What's next?

- Imagine that there is also a dog that scares the cat so they can't be alone together.
- What would be the least number of trips it would take to carry all four items across the river?
- Imagine that you have a bigger boat and you can bring two items in the boat with you at a time. You still have to be very careful because while you are rowing the boat you can't keep the mouse from eating the magic beans, or the cat from eating the mouse, or the dog from scaring the cat away.
- What is the least number of trips it will take to get everything across the river?

## To learn more

### ***Mr. Grumpy's Outing***

*by John Burningham*

In this book more and more animals ask to join Mr. Grumpy when he has decided to take a trip in his small boat.

***<http://pbskids.org/cyberchase/games.html>***

Crossing the River - Help Cybersquad cross the river in a tiny boat. Be careful not to sink the boat.

## How it helps with school

### **Texas Essential Knowledge and Skills (TEKS) Standards**

Probability and Statistics: 4.13A; 5.12B

Underlying Processes and Mathematical Tools: 3.15B-D, 3.17B; 4.14B-D, 4.16B; 5.14B-D, 5.16B

### **National Council of Teachers of Mathematics (NCTM) Standards**

Data Analysis and Probability, Problem Solving, Representation

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