

## MATH EXTENSION—PROBLEM OF THE WEEK

### Investigation 1: Origin of Seeds

Two students brought snacks to the math-club party. They made little bags of three different mixtures of dried fruit. Each mix included dates, raisins, and cherries.

Can you figure out how many of each kind of dried fruit they put into each little bag?

#### Fruit Mix 1

There are 3 dates.

Dates \_\_\_\_\_

There are three times as many cherries as dates.

Raisins \_\_\_\_\_

The total number of pieces of dried fruit is 15.

Cherries \_\_\_\_\_

#### Fruit Mix 2

There are twice as many cherries as raisins.

Dates \_\_\_\_\_

There are twice as many raisins as dates.

Raisins \_\_\_\_\_

There are 12 cherries.

Cherries \_\_\_\_\_

#### Fruit Mix 3

The dates and raisins add up to 11.

Dates \_\_\_\_\_

There are three times more dates than cherries.

Raisins \_\_\_\_\_

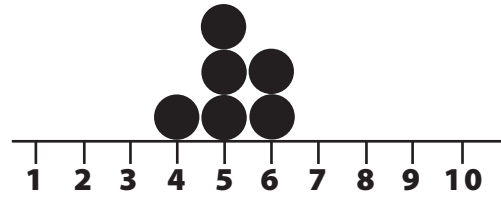
The total number of pieces of dried fruit is 14.

Cherries \_\_\_\_\_

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## Investigation 2: Growing Further

A class had 1 bean. The students planted it, and 6 bean pods grew on their bean plant. The line plot shows the number of beans that students counted in each pod.



What was the most common number of seeds they found in their pods?

What was the total number of seeds their plant produced?

Next year, the class is going to plant all the seeds. The students predict that the average number of seeds in each pod will be 5.

If 10 seeds grow into bean plants, estimate how many seeds the plants will produce.

- Close to 50
- Close to 100
- Close to 300

Write a note to this class. Tell them how many seeds the plants might produce next year. Explain how you solved the problem.

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## Investigation 3: Meet the Crayfish

Your class teamed up with a class in North Dakota as FOSS website penpals. The North Dakota class recorded the movements of their four crayfish for 2 weeks. Below are the data they collected. The data are not well organized. Your job is to reorganize the data to see if you can predict where each of the North Dakota crayfish will be on Day 11.

The crayfish are named Speedy, Tiny, Rosie, and Flipper.

The four houses are coded with geometric shapes: ●, ▲, ■, and ▬.

Day 1	Rosie	●	Speedy	▲	Tiny	■	Flipper	▬
Day 2	Tiny	▬	Speedy	▲	Flipper	■	Rosie	●
Day 3	Rosie	▬	Flipper	●	Speedy	▲	Tiny	■
Day 4	Speedy	●	Rosie	▲	Tiny	▬	Flipper	■
Day 5	Flipper	■	Tiny	●	Rosie	▬	Speedy	▲
Day 6	Rosie	▬	Speedy	▲	Flipper	■	Tiny	●
Day 7	Tiny	■	Speedy	●	Flipper	▬	Rosie	▲
Day 8	Rosie	▲	Flipper	■	Speedy	●	Tiny	▬
Day 9	Speedy	●	Rosie	▲	Tiny	▬	Flipper	■
Day 10	Flipper	■	Tiny	▬	Rosie	▲	Speedy	●

Reorganize the crayfish information in a more useful chart.

Make 4 bar graphs of the data.

Predict in which house each crayfish will be on Day 11, and explain why you think so.

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## **MATH EXTENSION—PROBLEM OF THE WEEK**

### Investigation 4: Human Body

An after-school science club was studying owls. They discovered that owls live longer in captivity than they do in the wild. The barn owl lives about 16 years in the wild, and it lives three times longer in captivity. How long does the barn owl live in captivity?

Show your work and explain your answer.

The great horned owl lives 12 years less in captivity than the barn owl. How many years does the great horned owl live in captivity?

Show your work and explain your answer.

The great horned owl lives one-fourth fewer years in the wild than it does in captivity. How many years does the great horned owl live in the wild?

Show your work and explain your answer.