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## PIPS

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| Page | 4-Square | Problem Solving Strategy |
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| $\underline{2}$ | Blank Template |  |
| $\underline{3}$ | Model - Easy level | Picture (subtraction) |
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| $\underline{7}$ | Model - Medium level | Pictograph (subtraction) |
| $\underline{8-9}$ | SCIENCE <br> (Quarter Moons in one <br> year) - challenging level | Act it out <br> Make a Table <br> Look for a Pattern |
| $\underline{10}$ | SCIENCE <br> (comparing Mercury years <br> to Earth years) - <br> challenging level | Act it out <br> Make a Table <br> Look for a Pattern |

## Info

(What information helps me to solve this problem?)
1.
2.

## Solution

1. Number Sentence:
2. Word Sentence:

## Info

(What information helps me to solve this problem?)

1. 6 videotapes
2. Gives 3 away

Picture (or other Strategy)


## Solution

1. Number Sentence:
$6-3=3$ videotapes
2. Word Sentence:

Jacob has 3 videotapes left.

## Info

(What information helps me to solve this problem?)

1. 7 people
2. 3 cupcakes each

Mike had a birthday party. He invited six friends. Mike and his six friends each got 3 cupcakes. There were 9 candles on each cupcake. How many cupcakes were there in all?

Picture (or other Strategy)


$$
\text { Key: } \square=\text { I cupcake }
$$

## Solution

1. Number Sentence:
$7 \times 3=21$ cupcakes
2. Word Sentence:

There were 21 cupcakes in all.



## Problem

(What is the question that I need to answer?)
How many more catches did Billy make in the third inning than in the second inning?

## Info

(What information helps me to solve this problem?)

1. 3 catches in the $3^{\text {rd }}$ inning
2. 4 catches in the $2^{\text {nd }}$ inning

Billy caught the ball 4 times in the second inning of the baseball game. He caught it 13 times in the third inning. How many more catches did Billy make in the third inning than in the second inning?

## $D$

icture (or other Strategy)
We made a pictograph.


$$
\text { Key: } O=1 \text { catch }
$$

## Solution

1. Number Sentence:
| 3-4 = 9 more catches
2. Word Sentence:

Billy caught 9 more balls in the $3^{\text {rd }}$ inning than in the $2^{\text {nd }}$ inning.
(What is the question that I need to answer?)

> About how many times will we be able to see a Quarter Moon in one year?

## Info

(What information helps me to solve this problem?)

1. About 30 days $=$ About $I$ month for one revolution
2. 12 months in one year, so about 12 revolutions in one year.
3. 2 Quarter Moons in each revolution

It takes about 30 days for the moon to revolve around Earth one time. In one revolution, we see four phases of the moon: New moon (can't see it), Full moon (see whole circle), First Quarter moon (see half circle), and Last Quarter moon (see half circle). About how many times will we be able to see a Quarter Moon in one year?

## P

icture (or other Strategy)

We acted it out.

Then we made a table, and looked for a pattern.

| Months | Quarter <br> Moons |
| :---: | :---: |
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |
| 4 | 8 |
| $\downarrow$ | $\downarrow$ |
| 12 | 24 |

## Solution

1. Number Sentence:
$12 \times 2=24$ Quarter Moons
2. Word Sentence:

We will be able to see the Quarter Moon about 24 times in one year.


## Info

(What information helps me to solve this problem?)

1. Earth takes 12 months to revolve around the sun, and 12 months $=$ one year on Earth
2. Mercury takes 3 months to revolve around the sun.

It takes one year (12 months) for Earth to revolve around the sun, and it takes Mercury about 3 months to revolve around the sun. If you could live on Mercury, how old would you be now in Mercury years? (Hint: One year on Earth = ? years on Mercury)

## Pi

icture (or other Strategy)
We acted it out. Then we made a table and looked for a pattern.

| Earth | Mercury |
| :---: | :---: |
| 3 months | 1 year |
| 6 months | 2 years |
| 9 months | 3 years |
| 12 months | 4 years |


| Earth | Mercury |
| :---: | :---: |
| 1 year | 4 years |
| 2 years | 8 years |
| 3 years | 12 years |
| $\downarrow$ | $\downarrow$ |
| 8 years | 32 years |

## Solution

1. Number Sentence:
$8 \times 4=32$ years
$4+4+4+4+4+4+4+4=32$
2. Word Sentence:

You would be 32 years old on Mercury if you are 8 years old on Earth.

