

**math**

## **Thinking Patterns**

***"Thinking patterns"* are simple ways of thinking; what is the problem asking me to do?**

# **Problem Solving Strategies**

**POSTERS**

**Amazing Documents 2014**

# Understanding Thinking Patterns

Thinking Patterns are a problem solving strategy to help students understand which operation to use during word problems. Many students struggle with word problems because they cannot visualize what is happening in the scenario. Thinking patterns help students connect their visualization with an operation.

The thinking patterns are divided up into five basic operations.

## ***Some and Some More – Addition***

Some and Some More or (SSM) for short is used in a scenario when a character in a word problem has “some” of an object and gets “some more”.

For example, Joey has \$10. He mowed the lawn for his dad and earned \$15. How much money does Joey have now?

Joey had some money and then he got some more. This problem would require addition to solve.

## ***Some Went Away – Subtraction***

Some Went Away or (SWA) is used in a scenario when a character in a word problem has “some” of an object and “some goes away”.

For example, Sarah has a dozen cookies to sell. She sold 3 cookies. How many cookies does she still need to sell? Sarah had “some” cookies and she sold 3. Those three went “away”. The problem would require subtraction to solve.

## ***Bigger Smaller Difference – Subtraction***

Bigger Smaller Difference (BSD-) is used in a scenario when a two or more things in a word problem are compared to one another. Often questions that ask, “How many more...”, “How many fewer...” “How much more...” are BSD problems. We usually think when one item in the problem is BIGGER and one problem is smaller and we are looking for the difference, then the problem is BSD.

For example, Joey is 52 inches tall. Sarah is 48 inches tall. How much taller is Joey than Sarah?

Joey is bigger and Sarah is smaller. We want to find out the difference in their heights. The problem requires subtraction to solve, but nothing “went away”.

## ***Equal Groups Put Together – Multiplication***

Equal Groups Put Together (EGPT) is used in a scenario when equal sized groups are put together for a total.

For example, Jewel bought 6 dozen cookies. How many cookies did she buy?

This problem is dealing with 6 equal groups of cookies. Students could add 12 six times or put the equal groups together by multiplying.  $6 \times 12 = 72$ .

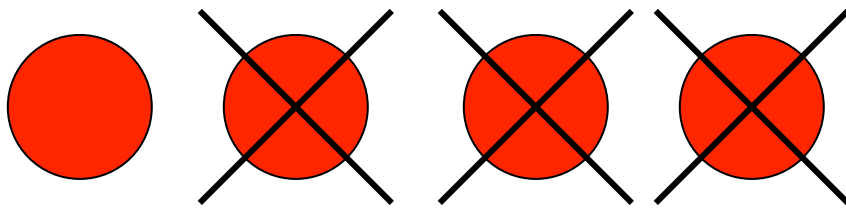
## ***Equal Groups Take Apart – Division***

Equal Groups Take Apart (EGTA) is used in scenarios when items are being taken apart in equal groups.

For example, I have a bag of 50 pieces of bubble gum. I want to share the gum with 5 of my friends. How many pieces will each friend get?

The bubble gum is to be shared evenly with all five friends. The bag of gum needs to be taken apart in equal groups, so the problem is Equal Groups Take Apart.

# Some Went Away

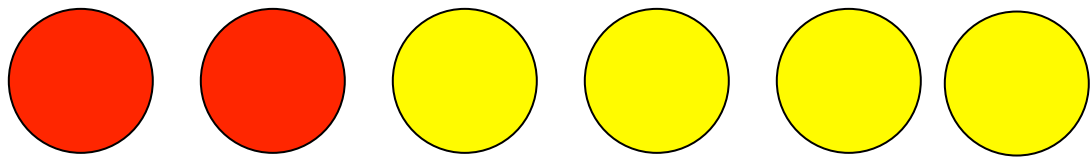


$$4 - 3 = 1$$

**Subtraction**

**S W A**

# Some and Some More

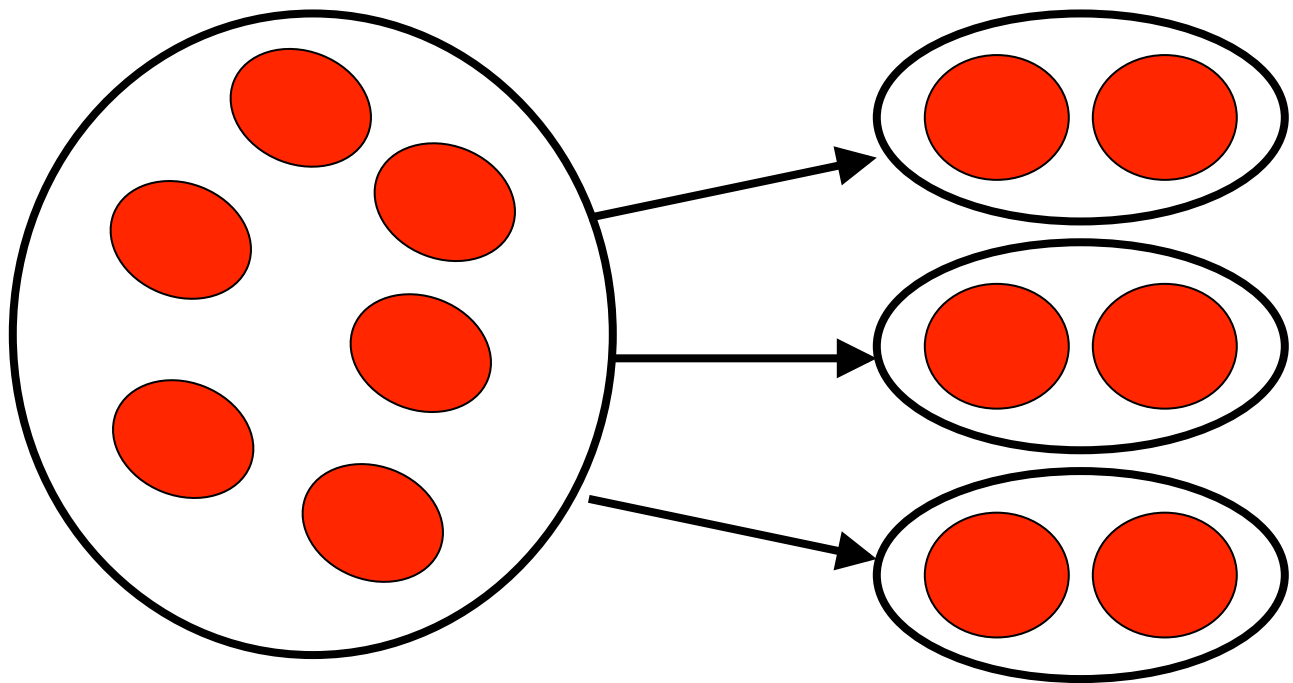


$$2 + 4 = 6$$

**Addition**

**S S M**

# Equal Groups Take Apart

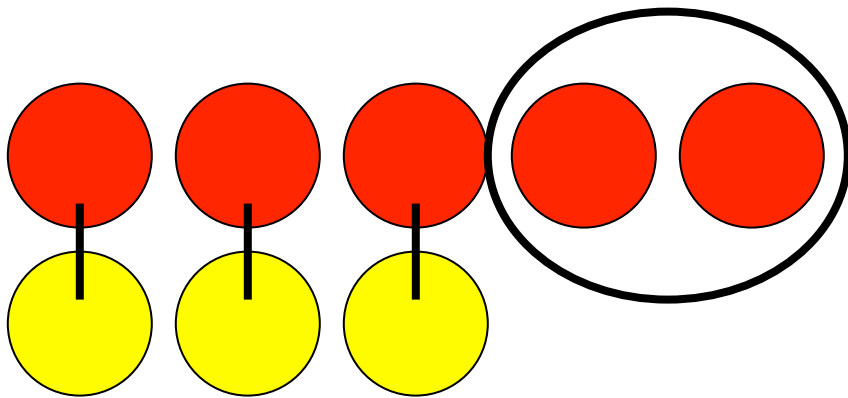


$$6 \div 3 = 2$$

**Division**

**E G T A**

# **Bigger, S smaller, Difference**

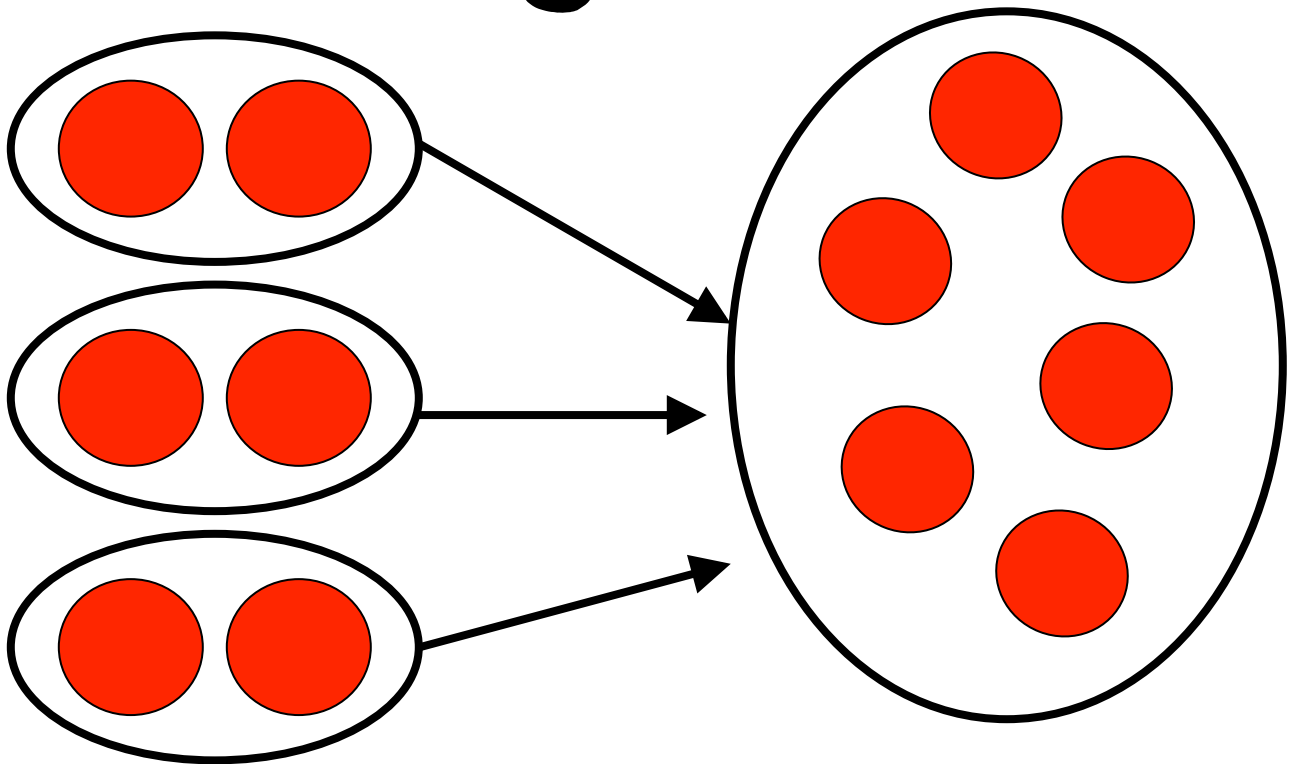


$$5 - 3 = 2$$

**Subtraction**

**B S D**

# Equal Groups Put Together



$$3 \times 2 = 6$$

## Multiplication

# EGPT