



Ages 4 and up!

# Unifix® Cubes

Activity Booklet



## Patterns

Patterning is an essential skill for pre-math and pre-reading. Children learn to see a pattern and anticipate how the pattern can be extended. This skill will develop visual memory and thinking skills.

Start with a simple two-color pattern like this:



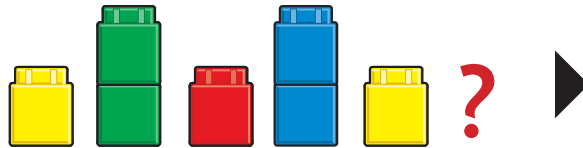
Ask the child to show you how the pattern continues by selecting and adding the appropriate cubes.

Try other *a-b-a-b* patterns. Move on to more complex patterns as the child becomes skilled. Here are some examples:

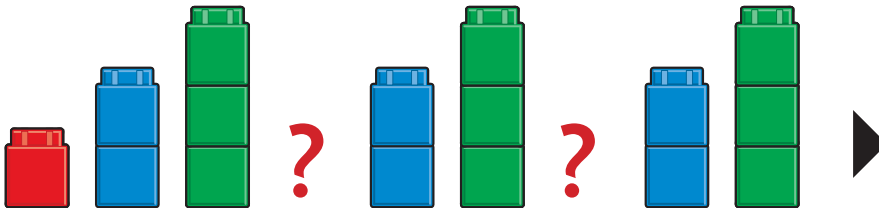


## More Patterns

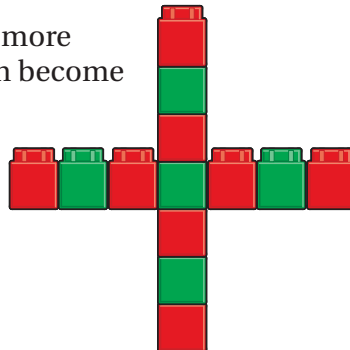
As children master patterns with color, try patterns with numbers and color such as:



Try making a pattern and leaving out some of the rods. This is a great problem-solving and thinking activity.



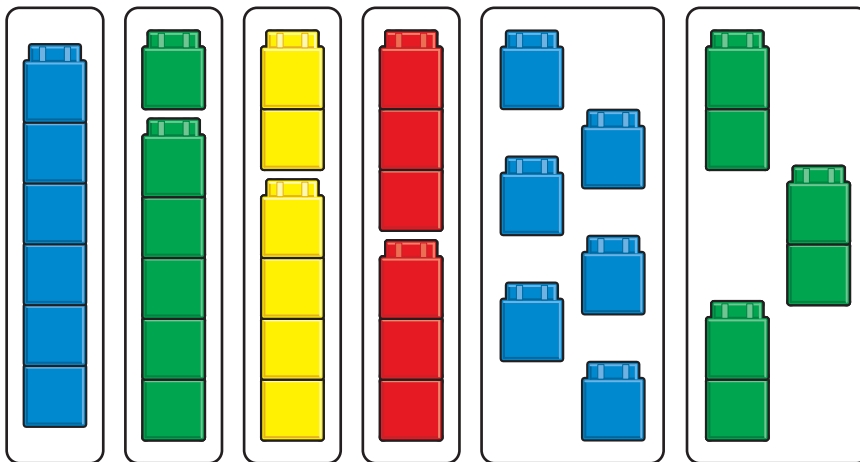
You can also make patterns that go in more than one direction. These patterns can become more complex and fun as they grow:



## Number Concepts

This simple activity helps children understand that a number of objects can be shown in several ways and helps introduce early computing skills.

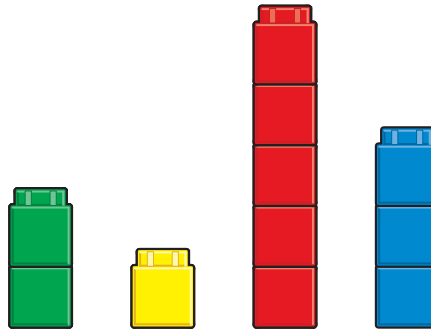
Ask the child to show you different ways of making a number with Unifix cubes. Here are some of the ways to show 6:



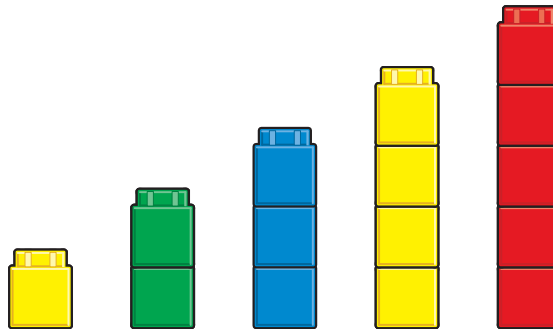
<b>6</b>	
<b>= 6</b>	<b>= 3+3</b>
<b>= 1+5</b>	<b>= 2+2+2</b>
<b>= 2+4</b>	<b>= 1+1+1+1+1+1</b>

## Number Concepts: Ordering and Sequencing

Make rods of Unifix cubes from 1 to 5 and place them in front of the child in random order.



Ask the child to put them in order and observe her work, asking her to discuss what she is doing. Suggest putting the rods in order from smallest to biggest.

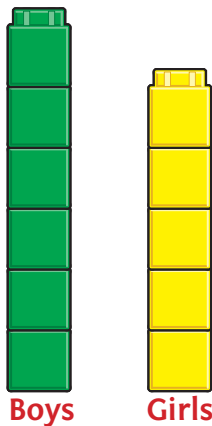


Do this with more and more rods until the child can successfully order from 1 to 10.

## Graphing

Unifix cubes are ideal for making simple graphs. All you need is Unifix cubes and cards to label the parts of the graph.

### Our Class



In the classroom, give each boy a green cube and each girl a yellow cube. Without actually counting boys and girls, ask the class to guess if there are more boys or more girls. Stack up the cubes and label to make a basic graph:

	Boys	Girls
Guess	5	5
Count	6	5

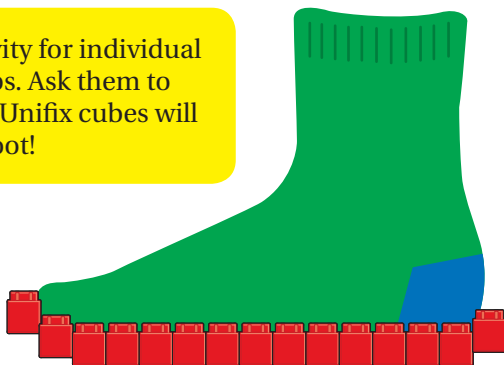
Use Unifix cubes to graph things like the weather. Use yellow for sunny days, blue for rain, white for clouds, or make up your own color plan. Graph the weather over a month and discuss how many days were rainy, sunny, cloudy, and so on.

Other ideas for graphs include favorite foods, books, movies, or songs.

## Estimation

Estimation is a very important math skill. It is a good idea to estimate how big you think an answer to a math problem will be before calculating, so that you can see how close you are.

This is a fun activity for individual children or groups. Ask them to guess how many Unifix cubes will fit around your foot!



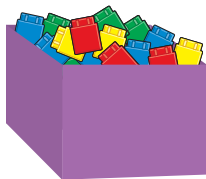
Have children write down their answers, or if you have enough cubes, have them actually take the number of cubes they guess will fit around your foot. Compare their guesses to the actual number and discuss the results.

Ms. Smith's Feet Estimates		
Jo	15	
Flo	6	
Stu	94	

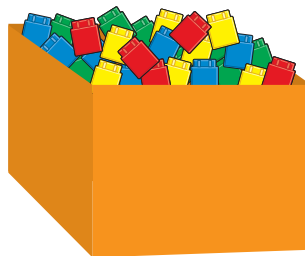
How many guessed too high or too low? Try again with one of the children's feet and see if the children can get closer with their estimates. You can extend this to guessing other people's feet, hands, or arms.

## Estimation and Volume

Gather some boxes for this activity. One should measure twice as long, high, and wide as another. Tissue boxes work well. Fill the small box with loose Unifix cubes and have children estimate how many are in the box. Let them experiment and explain how they came up with their answers. Have them count the cubes and compare to their estimates.



6"



12"

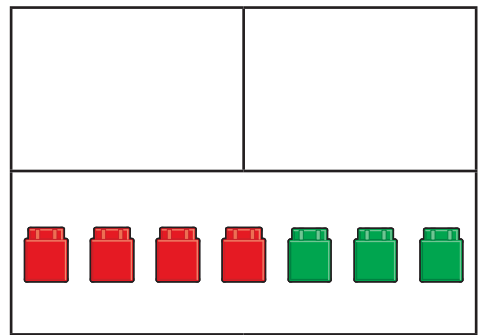
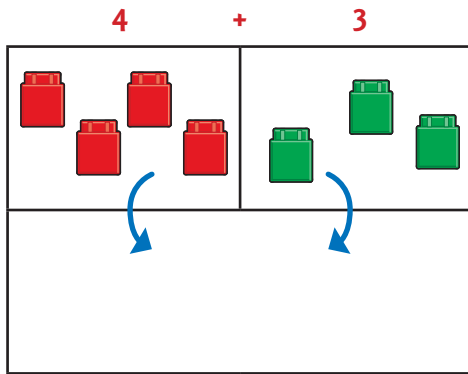
Now show the larger box, encourage the children to measure the boxes, and have them estimate how many cubes will fill the larger box.

Many younger children will think that the larger box holds double the quantity of the smaller box, but it holds about eight times as many cubes! Older children can be introduced to cubed numbers with this activity.



## Addition: Demonstrating Word Problems

Draw three boxes on a sheet of paper as shown. Tell a story such as “the balloon man has four red balloons and three green balloons. How many does he have altogether?” Use the corresponding color Unifix cubes to lay out the problem. Move the cubes as shown in the boxes below.



$$4 + 3 = 7$$

Discuss how addition is “part plus part equals the whole” and repeat with various simple word problems.

## Subtraction

Write a subtraction problem on the board or make up cards. Here is an example. Ask children to make a “ten rod” with Unifix cubes and then remove or “take away” four cubes. Count the remaining cubes together and record the solution. Try this with various problems; you can even have the children try one on you.



10

- 4

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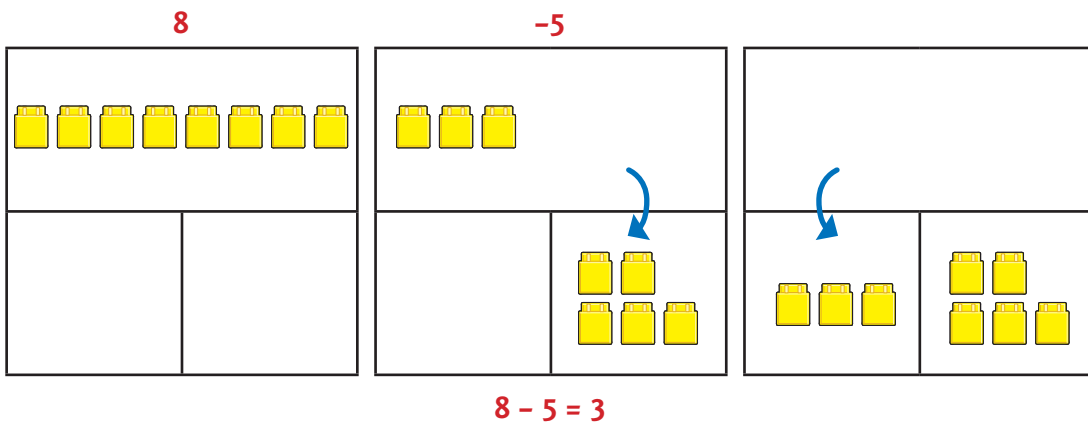
6



Start with subtraction problems with answers under 10 before moving on to more complex problems.

## Subtraction: Modeling Word Problems

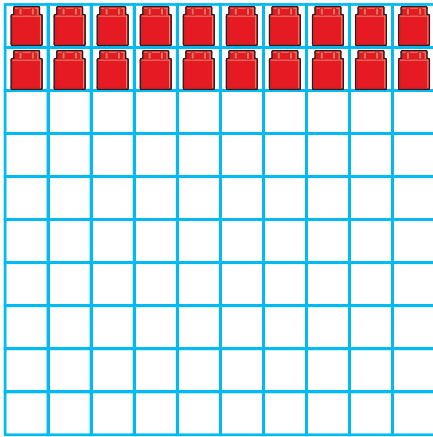
On a piece of paper, make boxes like the ones shown. This model can help children to “see” how a word problem with subtraction works. Say, “You have eight bananas and give five to your friend. How many are left?” Demonstrate this problem as you place eight yellow Unifix cubes in the upper part of your diagram and move five cubes down as shown.



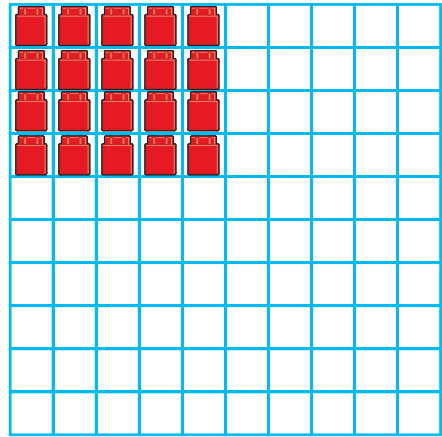
Use this model for other word problems. Write down the subtraction problem in the usual format on the board or a piece of paper.

# Multiplication

Use (make) a 10 x 10 “hundred grid” as shown. Show how a multiplication problem can be laid out on a grid. This is also a good way to show how different multiplication problems can give the same solution. Here are two ways to show 20:



$$\begin{array}{r} 20 \\ \hline 2 \times 10 \\ 4 \times 5 \\ \text{etc.} \end{array}$$

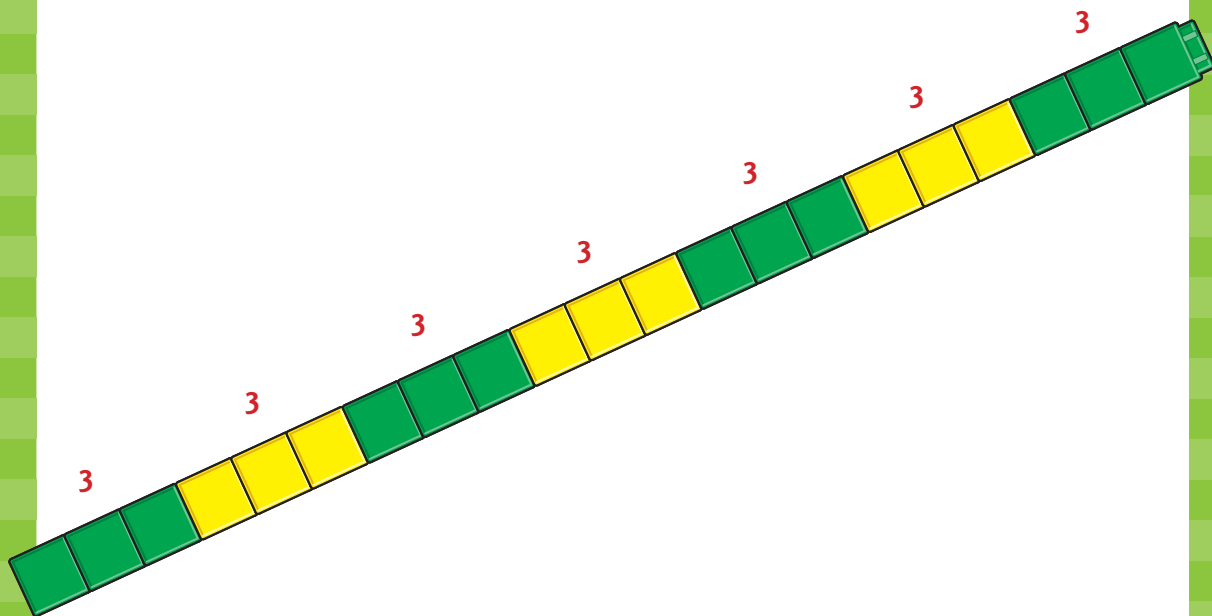


You can also lay out multiplication problems with rows of Unifix rods:

$$4 \times 3 \quad \begin{array}{cccc} \text{rod} & \text{rod} & \text{rod} & \text{rod} \\ \text{rod} & \text{rod} & \text{rod} & \text{rod} \\ \text{rod} & \text{rod} & \text{rod} & \text{rod} \end{array} \quad = 12$$

## Multiplication Facts

Ask the child to create a line of Unifix cubes that will model the “3s” multiplication table. It is helpful to use two colors so that the sections alternate. Connect small rods of three Unifix cubes in a row.

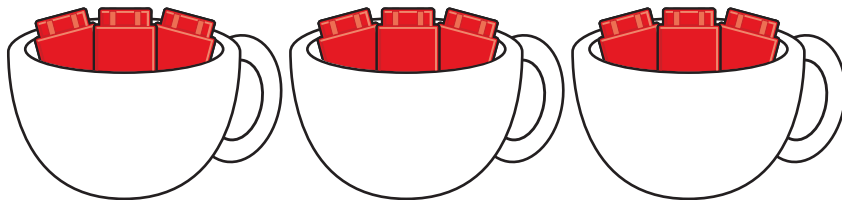


Go up to 21 cubes or “3 x 7” and have the children write out and discuss the multiplication facts for 3 like this:  $1 \times 3 = 3$ ,  $2 \times 3 = 6$ , and so on.

## Division

Use loose Unifix cubes, divided into various numbers of small containers. Cups or bowls work well. Try this with three cups to start and have the children “divide” or sort quantities of cubes that can be divided by 3. Ask them to put an equal amount in each cup. Do this with 3, 6, 9, and 12 cubes.

$$9 \div 3 = 3$$

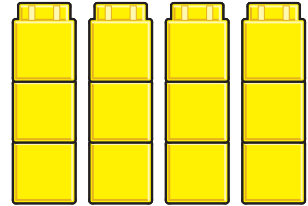


Practice writing out what the children are doing so they can become familiar with the form of division problems. This can also be adapted for simple word problems. “Jill has six oranges and there are three children. How many oranges will each child get if they are divided evenly?” Do this with various numbers of Unifix cubes and cups, selecting situations where numbers are evenly divided. Then, when ready, move on to division problems involving remainders.

## More Division

Children divide rods of Unifix cubes into smaller groups with this method. Have children make a rod of 12 cubes and write:

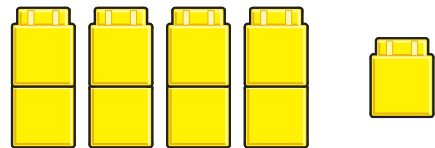
$$12 \div 3 = \boxed{4}$$



Ask them to show you how to divide the rod of 12 into even groups of 3 rods each. How many smaller rods did they get? Are they all even? Write down the solution.

This method is a good way to demonstrate division with remainders. Have children try a problem such as  $9 \div 2 = \boxed{\phantom{0}}$ . How many rods of 2 can we make? The one left is the remainder.

$$9 \div 2 = \boxed{4} \text{ r } 1$$



# Unifix® Cubes and Support Materials

Unifix Cubes provide children from PreK through the elementary grades with hands-on experiences that meet the expectations of the Common Core State Standards. For a complete listing of all Unifix resources, books, and games visit [UnifixCubes.com](http://UnifixCubes.com).



## Unifix Cube Packages

- 100 cubes 2-25
- 300 cubes 2-300
- 500 cubes 2-21
- 1,000 cubes 2-BKA
- SAVE!** 5,000 cubes 211119

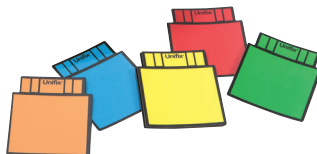
## Overhead Unifix Cubes 2-451



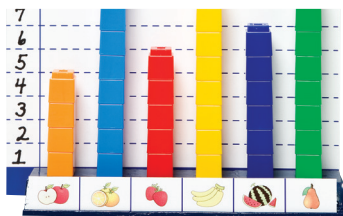
## Unifix 1-10 Stair 210838



## Unifix 1-120 Number Line 211504



## Large Unifix Magnets 2-737

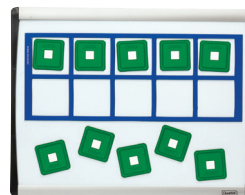


## Unifix Graphing Base 211088

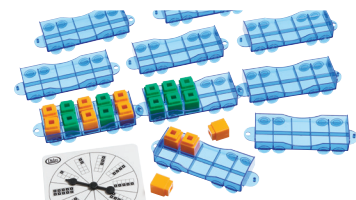


## Unifix Kit for the Common Core 211465

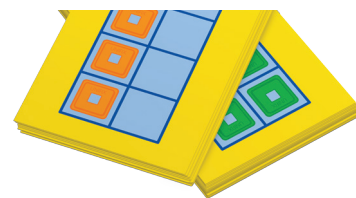
## Ten-Frame Resources



## Unifix Magnetic Ten-Frames 211037



## Unifix Ten-Frame Trains 2-2200



## Unifix Ten-Frame Cards 211499

