

Shape Codes

Find the numbers, then read the hidden autumn words

Name: _____ Date: _____

How it works. In each puzzle every shape stands for a number, and the same shape always means the same number. Use the equations to find all the numbers. Then put the letters in order from the smallest number to the largest — they spell a word.

Puzzle 1 — Warm-up

Each shape stands for a number. The same shape always means the same number. Find the numbers.

$$\triangle + \bigcirc = 8$$

$$\bigcirc - \triangle = 2$$

$$\hexagon - \bigcirc = 3$$

$$\star \div \triangle = 4$$

Write the value of each shape under its letter:



S

= _____



N

= _____



T

= _____



U

= _____

Write the letters in the boxes in order of their numbers, from the least to the greatest:

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Puzzle 2 — The chain

Find the shapes one after another — each equation uses shapes you already know. Find the numbers.

$$\square + \square = 4$$

$$\pentagon \div \square = 2$$

$$\bigcirc = \square + \triangle$$

$$\hexagon - \bigcirc = 3$$

$$\star = \hexagon \times \square$$

Write the value of each shape under its letter:



L

= _____



E

= _____



M

= _____



P

= _____



A

= _____

Write the letters in the boxes in order of their numbers, from the least to the greatest:

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Puzzle 3 — A shape times itself

One equation multiplies a shape by itself. Start there. Find the numbers.

$$\triangle \times \triangle = 9$$

$$\bigcirc - \square = 2$$

$$\diamond \times \hexagon = 10$$

$$\square = \triangle + \triangle$$

$$\hexagon - \bigcirc = 2$$

Write the value of each shape under its letter:



C

= _____



B

= _____



H

= _____



R

= _____



I

= _____

Write the letters in the boxes in order of their numbers, from the least to the greatest:

--	--	--	--	--

Puzzle 4 — The pattern

Find the numbers, then look at them in order. What do you notice? Find the numbers.

$$\diamond - \heartsuit = 3$$

$$\hexagon = \diamond + 3$$

$$\triangle - \bigcirc = 3$$

$$\diamond + \heartsuit = 5$$

$$\bigcirc = \heartsuit \times 10$$

Write the value of each shape under its letter:



S

= _____



T

= _____



F

= _____



O

= _____



R

= _____

The numbers in order: _____, _____, _____, _____, _____. The pattern: _____

Write the letters in the boxes in order of their numbers, from the least to the greatest:

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Puzzle 5 — Challenge: seven shapes

Seven shapes, seven equations, seven letters. Find the numbers.

$$\text{Red Hexagon} + \text{Green Pentagon} = 5$$

$$\text{Green Pentagon} - \text{Red Hexagon} = 1$$

$$\text{Blue Circle} = \text{Red Hexagon} \times \text{Green Pentagon}$$

$$\text{Orange Star} = \text{Blue Circle} + \text{Red Hexagon}$$

$$\text{Blue Diamond} \div \text{Red Hexagon} = 6$$

$$\text{Purple Square} - \text{Blue Circle} = 9$$

$$\text{Yellow Triangle} = \text{Purple Square} + \text{Green Pentagon} + \text{Red Hexagon}$$

Write the value of each shape under its letter:



E

S

H

T

R

A

V

= _____ = _____ = _____ = _____ = _____ = _____ = _____

Write the letters in the boxes in order of their numbers, from the least to the greatest:

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Puzzle 6 — Make your own

Choose a word with 4 different letters (for example NEST, PINE, OAKS or WIND). Give each letter a shape and a number, so that the numbers put the letters in the right order. Write 4 equations that let a friend find your numbers. Test it on someone!

My word: _____

Equation 1: _____

Equation 2: _____

Equation 3: _____

Equation 4: _____

Answer Key (for the teacher)

Puzzle 1

triangle N = 3, circle U = 5, hexagon T = 8, star S = 12. Word: NUTS

Puzzle 2

square M = 2, pentagon A = 4, circle P = 6, hexagon L = 9, star E = 18. Word: MAPLE

Puzzle 3

rhombus B = 1, triangle I = 3, square R = 6, circle C = 8, hexagon H = 10. Word: BIRCH

Puzzle 4

heart F = 1, rhombus R = 4, hexagon O = 7, circle S = 10, triangle T = 13. Word: FROST

Puzzle 5

hexagon H = 2, pentagon A = 3, circle R = 6, star V = 8, rhombus E = 12, square S = 15, triangle T = 20.
Word: HARVEST

Puzzle 4 pattern: the numbers go up by 3 each time (1, 4, 7, 10, 13).

Puzzle 6: any word with four different letters works; a good check is that the equations have exactly one solution — two equations of the form "shape + shape = ..." and "shape – shape = ..." for the first pair is the easiest start.