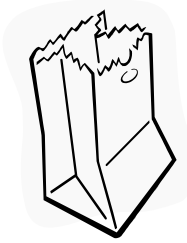


It's In



The Bag!

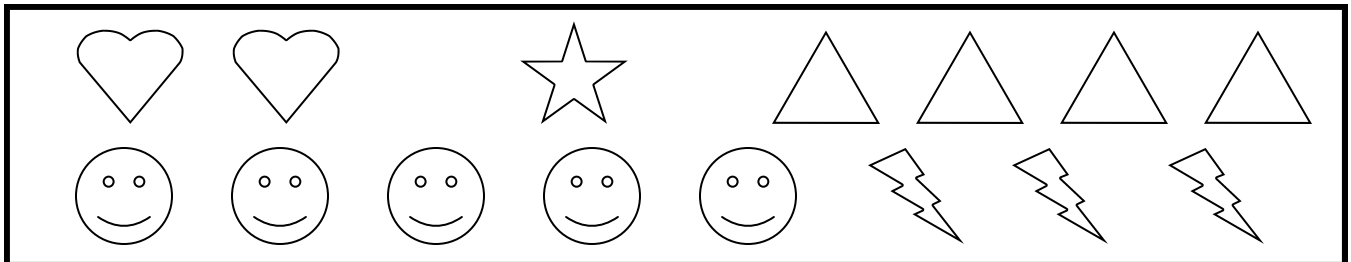


It's In The Bag!

Descriptions and Algebraic Equations

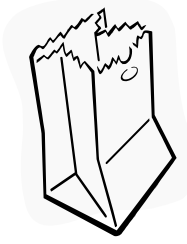
Using the shapes below, write (in words) four relationships between the shapes. Then translate your written words into algebraic equations using variables.

Let **h** = number of hearts, **s** = number of stars, **t** = number of triangles,
f = number of faces, and **b** = number of lightning bolts.



Written Relationship Regarding Number of Shapes	Equation
Example: Two times the number of lightning bolts minus the number of stars equals the number of faces.	$2b - s = f$





It's In The Bag!

Create Your Own Mystery Bag!

Use the template below to create a rough draft of your bag project. Before creating your actual bag, have **two** students check to make sure that your clues are logical and lead to your intended answer.

I have completed this mystery bag activity and verified that the clues lead to the intended answer.

Student Signatures: (1) _____ (2) _____
(clearly written)

Statement telling the three objects in your bag. (Not the number!)	Heading:
Written Clue #1:	
Written Clue #2:	
Written Clue #3:	
Written Clue #4:	
Written Clue #5:	
Hint:	
Answer:	



It's In The Bag! - Mystery Bag Verification Sheet

Student Who Created This Bag: _____

Objects in the Mystery Bag: _____

Assign Variables:

Write Equations:

Mystery Bag Answers:

Peer Feedback:

I was able to successfully complete this bag activity: _____

Student Bag Reviewer's Name

It's In The Bag! - Mystery Bag Verification Sheet

Student Who Created This Bag: _____

Objects in the Mystery Bag: _____

Assign Variables:

Write Equations:

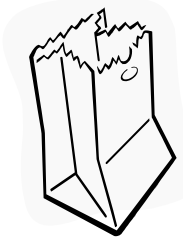
Mystery Bag Answers:

Peer Feedback:

I was able to successfully complete this bag activity: _____

Student Bag Reviewer's Name





It's In The Bag!

Teacher Tips

(1 of 3)

Lesson Description: It's In The Bag is a hands-on activity that requires students to design a mystery bag using written clues to describe the relationships between the objects hidden in their bags. Other students then analyze their clues, create equations, and solve these equations to determine the contents of the mystery bags.

Math Content: Creating verbal descriptions of the relationships between quantities of items, Writing Expressions and Writing Equations from verbal descriptions, Solving Equations, Problem Solving, Logical Thinking

Time Required: 2-3 Class Periods (plus time at home for the actual designing of the project bag.)

It's In The Bag includes:

- * 1 It's In The Bag! Descriptions and Algebraic Equations student worksheet
- * 1 It's In The Bag! Solve the Mystery Bag! student worksheet
- * 1 It's In The Bag! Solve the Mystery Bag! Answer Key
- * 1 It's In The Bag! Student Directions sheet
- * 1 It's In The Bag! Create Your Own Mystery Bag! student worksheet
- * 1 It's In The Bag! Bag Verification Sheet student worksheet
- * 3 It's In the Bag! Teacher Tips pages
- * 1 It's In The Bag! Cover Sheet

10 pages in all!

Materials Needed: Paper lunch bags

Suggested Grade Level: 5th - 8th

Teacher Testimonial:

It's In The Bag! is a project that puts writing and solving equations into a concrete context. The creation of their own mystery bag project requires a deeper level of student understanding of the key concepts of writing and solving equations. Students are required to create their own mystery bag by identifying and describing relationships between quantities and then writing equations that represent these relationships. This creative process builds conceptual understanding and students enjoy the opportunities that they have to solve the mystery bags created by other students. Finally, the bag designs and clues that some students create are incredible!

It's In The Bag Activity Sequence:

The following is a suggested sequence to use with the "It's In The Bag!" activity:

- 1) Students complete "Descriptions and Algebraic Expressions" worksheet.
- 2) Students complete the "Solve the Sample Mystery Bag!" worksheet
- 3) Students use the "Project Directions and Checklist" sheet and the "Create Your Own Mystery Bag!" template sheet to design the rough draft of their mystery bags.
- 4) At least two students solve the completed rough draft of each student's mystery bag to verify that the clues lead to the intended answer. These two students then sign the bag creator's "Create Your Own Mystery Bag!" template.

