

LESSON PLAN #1

PRESSCHOOL-KINDERGARTEN



Engineering Superheroes

Learning Objectives

Students will be able to solve subtraction and addition problems using numbers 0-8

Materials

Materials: 2 chocolate bars, enough to have a set of 6 squares of chocolate and an additional set of 4 squares of chocolate.

Key terms

Addition and Subtraction

Introduction (2 minutes)

- Gather the students and display the chocolate. “This is the chocolate we will break today. Who likes chocolate?”
- Have students turn and talk to share when the last time was you had a chocolate with a partner and which was it.
- Say, “Today we are going to learn about addition and subtraction. We’ll be using this chocolate to help us.

Explicit Instruction/Teacher modeling (5 minutes)

- Show a chocolate bar with 6 squares and say, “Some people like to eat a whole chocolate, but I like to break it first in small pieces. Most chocolates come with marks to help us break them into pieces. How many pieces can I break this chocolate if I follow the marks?”
- Allow a few minutes for conversation and ask one or two students to answer. Say, “Right! I can break this into 6 pieces.”
- Say, “It is not good to eat too much chocolate at once, so I like saving for tomorrow”.
- Break the chocolate in 6 squares and say, “I have 6 pieces, if I eat two today, how many pieces left for me to eat tomorrow?”
- Explain to the class that you just solved a **subtraction** problem. Subtraction is when we take one thing away from another thing and find out what is left.
- Draw the problem using numbers ($6-2=4$) and demonstrate how to read the problem and explain the symbols (-,=).
- Now, bring the other unbroken set of 4 squares of chocolates and say, “My friend gave me 4 more chocolate squares”. I was very happy, because now I have more chocolates to eat. How many chocolates I have now?

- Wait for the students to think and ask one or two students. Say, “Yes, I now have 8 chocolate squares!”.
- Explain to the class that what you just solved was an **addition** problem. Addition is when you put more of one thing together.
- Draw the problem using numbers ($4+4=8$) and demonstrate how to read the problem and explain the symbols (+,=)

Guided Practice (15 minutes)

- Tell the class you’re are going to practice solving other subtraction and addition problems using chocolates with their help.
- Display all the 8 chocolates again and say, “I got all these chocolates from a friend. My mom ate 3 squares. How many slices I have left?”
- Write the problem, $8-3=$ __, on the board and read it aloud with the students echo reading after you.
- Ask the students to use props to solve the problem and give them time.
- Call the group and ask for the answer with guiding questions such as, “How do you know there are 5 squares left?”, and “Can you show us how you figure it out?”, and “What materials did you use to solve?”.
- Applaud the hard work of the class and tell students the many different strategies to solve the subtraction equation.
- Do the same thing with an addition problem, such as, “I had 5 chocolates, and my mom got me 2 more. How may I have now?” Repeat the previous 3 steps with the addition math.

Independent working time (15 minutes)

- Explain to the class that now they will get to practice solving some subtraction and addition problems on their own.
- Display the worksheet and review the instructions.
- Ask students to get their worksheets.

Assessment (5 minutes)

- Take note of students’ process and areas of confusion throughout the lesson. Check that students are able to count using one to one correspondence. Check if they are able to keep track of the two parts of the equation, and are reading the subtraction and addition equations correctly. Note if any students are mixing up addition or adding with subtraction.
- At the end of the session, collect student work samples and check for accuracy and areas of confusion.

Closing and Review (5 minutes)

- Gather the class together and provide one last group subtraction or addition practice (not both). Detail the strategy you noticed students using.
- Close the session saying something like, "You all worked so hard on your math problems today!"

ENGINEERING SUPERHEROES – Lesson #1 Worksheet – PS/K

Subtraction: count the how many colored objects are in each box. Now take away the darker pictures. How many are left? Write your answer in the box on the right.

Addition: count the colored objects. Now count the hollow one and color them. Count all of them. Write your answer in the box on the right.



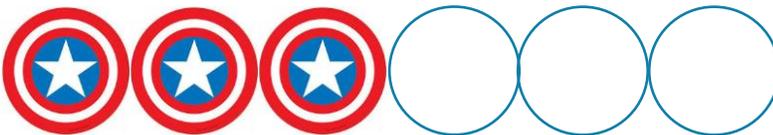
$$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$$



$$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$$



$$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$$



$$\begin{array}{r} 3 \\ +3 \\ \hline \end{array}$$



$$\begin{array}{r} 5 \\ -5 \\ \hline \end{array}$$