

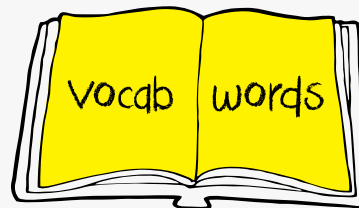
Problem Solving

Social Emotional Learning

Project and Purpose: Students will practice a process for problem solving.

Essential Question:

What are the steps for solving problems?



solve

problem

solution

- **Problem Solver Song**
- Picture of a crow
- *The Crow and the Pitcher* story
- Clear pitcher filled half way with water.
- Pebbles or small rocks – enough to put into the pitcher and bring the water level up to the top.
- A poster of the problem-solving process:
 - Think about the problem and put it into words.
 - Think about all kinds of ways to solve the problem.
 - Try one of the ideas and see if it works!

Room Set up: Chairs, tables and desks pushed back to create an open space to move and interact.

PreK-2

Introduction

Teach the Problem Solver Song:

Problem Solver Song
(tune of Twinkle, Twinkle Little Star)

Problems, problems!
Think don't pout.
Ideas solve problems; try one out.

If it works, then hurray!
If it doesn't, try a new way.

Problems, problems!
Think don't pout.
Ideas solve problems; try one out.

Notes:

Direct Instruction (I do)

1. Hold up a picture of a crow. Ask students to describe what they see.
2. Explain that there is a story about a crow that has a problem.
3. Hold up pitcher, filled half-way with water. Explain that the crow can't get his beak in the pitcher far enough to drink. His beak is too short. He has a problem that needs to be solved. He sits down on the ground which is covered with pebbles.
4. Take out your poster of the **Problem-Solving Process**.
5. Talk with students about when you want to solve a problem, you think carefully and try things:
 - a. I think about the problem and put it into words: What is the problem? Have other people tried to solve this problem? What supplies do I have? How much time do I have to do this?
 - b. I think about all kinds of ways to solve the problem. If I'm lucky enough to have friends around, I ask my friends to help me.
 - c. I try one of my ideas and see if it works!
6. Use the process with the students to create solutions for the crow.
 - a. Ask students to put the crow's problem into their own words.
 - b. Ask for ideas to help the crow solve his problem.
 - c. Which idea should the crow try? Try it to see if it works.
7. Read the story read *The Crow and the Pitcher* and compare/contrast to student ideas.

Guided Exploration (We do)

1. Tell students that you have another problem for them to solve. You have a big knot that needs to be untangled. You want the students to use the process to solve your problem.
2. Ask for six volunteers to stand in a small circle. Tell students to reach across the circle with your right hand and grab the hand of one person, then use your left hand to take another person's hand. You must be holding the hands of 2 different people.
3. Problem solve together and untangle WITHOUT letting go of hands.
4. You have success when you are standing in a circle again.

Note: *some people might be facing out and other may be facing in.*

5. Encourage the group to use the problem-solving steps to untangle the knot without letting go of hands. Narrate what the group does to solve the problem.
6. Ask the group questions:
 - a. How did you solve the problem together?
 - b. What problem solving methods were successful?
 - c. What did you say to each other?
 - d. How did you communicate?- words, eye contact, feelings?
 - e. What would you change?
 - f. Stop and think-What you can do to improve your speed and success?

Independent Practice (You do)

1. Teacher explains that everyone will be in a new group to solve this same problem independently.
2. Teacher divides the class into new groups (kindergarten groups of six; first and second grade groups of 8-10) who will solve the same problem independently.
3. Each group will do the Knot game one at a time, with the class observing and the teacher narrating/coaching.
4. Repeat several times, checking in with the groups each time to reflect on their problem solving success and failures.

Conclusion/Reflection

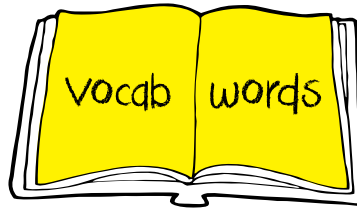
1. Lead a reflection discussion. Questions:
 - a. How did you do with your problem solving together?
 - b. What happened that worked?
 - c. When you had challenges, what did you learn to help you solve the problem the next time?
 - d. What steps do we need to take to solve problems?
2. Sing the **Problem Solver Song** one more time.

Extension

Suggested Aesop Fable for additional discussion: *The Mice in Council*. This story explores problem solving that doesn't work and will create an opportunity to discuss how the mice could solve their problem successfully.

- <http://fablesfaesop.com/belling-the-cat.html>

Notes:



Vocabulary Definitions

problem (n)

- Definition: a question raised for inquiry, consideration, or solution. A proposition in mathematics or physics stating something to be done. Difficulty in understanding or accepting.
- Context: Sarah had a big problem when the beads fell on the floor.

solution (n)

- Definition: an action or process of solving a problem; an answer to a problem.
- Context: The solution to Sarah's problem was to ask for help.

solve (v)

- Definition: to find a solution, an explanation or answer for.
- Context: The class helped Sarah solve her problem when they all helped clean up the beads off the floor.

Problem Solver Song

(sung to the tune of Twinkle, Twinkle Little Star)

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The Crow and the Pitcher

One day a very thirsty Crow saw a pitcher that was half full of clear, cool water. The Crow tried to take a drink, but his beak wasn't long enough to reach the water half way down. The Crow tried and tried and was about to give up when he took a moment to think. He looked around and had an idea for a way to solve the problem. He found some little pebbles and one by one, began dropping them into the pitcher. With each pebble, the water rose higher and higher until finally the problem was solved: the water was high enough to reach the top of the pitcher. And then the happy Crow drank the water!

Moral: Problem solving begins with thinking.



Source: www.allaboutbirds.org/guide/PHOTO/LARGE/american_crow_8.jpg

The Problem-Solving Process

1.

Think about the problem and put it into words.

2.

Think about all kinds of ways to solve the problem.

3.

Try one of the ideas and see if it works!