Research

By age 5 children have begun to form complex thoughts and ideas. Their logical thinking and reasoning skills also develop substantially. Reasoning and problem-solving skills are a strong foundation to promote lifelong learning. The ability to gather information efficiently and then comprehend, examine, and make an informed decisions is essential to function in school and work. It is important that kindergarten teachers work on these skills intentionally and incorporate them as part of their daily routine. Analyzing arguments, making inferences, reasoning, and implementing decisions to solve problems are important skills across all content areas and thus critical for school success.

Whittaker, J. V. (2014, July). Good Thinking! Fostering Children's Reasoning and Problem Solving. *Young Children,* 80-89. Retrieved June 06, 2016, from http://www.naeyc.org/yc/files/yc/file/201407/YC0714_Fostering_Children's_Reasoning_Whittaker.pdf

Problem Solving
AL.4.PK.C
Attempt problem solving activities to achieve a positive outcome.
The learner will:
- Attempt to solve problems in more than one-way, recognizing when help is needed
The learner may also:
- Try new ways to complete a familiar task
- Ask questions to clarify problems
- Discuss the different ways used to accomplish a task or to solve a problem
- Recall and use a previously successful strategy
- Change plan if a better strategy presents itself
- Observe mistakes and note the effectiveness of a difference solution (e.g. "That didn't work because …")
- Demonstrate increasing flexibility in a variety of situations, task, and activities

Effective Practices:
- Explicitly discuss and present/model a variety of strategies that can be used to solve problems
- Create and provide opportunities for learners to engage in problem solving activities
- Encourage children to use available materials to solve problems
- Engage learners in interactions that use known strategies in new situations
- Display a variety of materials and ask learners to complete a task, allowing them to choose the material that best suits the activity
- Ask open-ended questions that require thought and creative thinking
- Observe how learners solve problems in the classroom and offer assistance when needed
- Offer specific feedback on children's efforts to problem-solve
- Describe the pros and cons of strategies used by children to solve a problem
- Ask questions to identify whether or not a solution is working well
- Allow children to practice solving a problem in multiple ways to support flexible thinking

ACTIVITIES

Activity:
Students use trial and error methods to complete a tower building challenge using blocks.

Students will work in teams to build the highest, free-standing tower.

Activity Prompts:
Teacher should encourage students to make sure they work as a team. No one should be excluded. "Think about where to place the blocks….What different ways can you build your tower to make it higher? Why does it fall? How can you fix it and make it better?"

Evidence Collection Strategies:

- Teacher will observe and document students' ability to work as a team in solving a problem.

Home School Connection:

o **P**arents can complete this problem solving activity found on leapfrog.com at home with kids: Parents unscrew caps from a few jars of different sizes, place jars and lids in separate pile. Children then match the jars with the lids.
http://www.leapfrog.com/en-us/learning-path/activities/activity-if-the-jar-fits