



Frog in the Pond

Objective: Students will learn to develop and refine logical thinking skills as they experiment with different strategies.

Materials:

Laminated Frog in the Pond game board
10 - 20 frogs

Background:

The Frog in the Pond game is an adaptation of the ancient Chinese logic game known as NIM. Like NIM, Frog in the Pond encourages your students to use concrete materials to play a game cooperatively; strengthen logical thinking skills; look for patterns related to the quantity of ten; develop, verbalize (or write), test, and refine strategies.

Procedure:

- Two people play the game at a time. Both are frog catchers.
- Each player may catch either 1 or 2 frogs at a time.
- As long as there are frogs in the pond, players must catch frogs.
- The last frog is the “magic frog.” It is the one you *want* to catch. Please note that the “magic frog” may be caught by itself as the last frog on the board or it may be caught as one of the last 2 frogs on the board.
- Players decide who goes first. That player can remove either 1 or 2 frogs from the game board.
- Place 10 frogs on the game board.
- Player 1 removes one or two frogs. It is then Player 2's turn. Play continues until all frogs are removed from the game board. The person to remove the final frog (the “magic frog”) is the winner. **Note:** you can stop the game to check on strategies. Throughout the session, avoid telling students how to catch the “magic frog.” In addition, observing your students’ strategy development will help you informally assess their thinking and problem-solving skills.
- Play another full game with the same players. Have students develop strategies from which they can obtain the “magic frog.”
- As an alternative, play the game using a “poison frog” instead of a “magic frog” as the final game piece. The object of this game would be to avoid getting “stuck with” the poison frog. Have students repeat playing, developing strategies along the way.

Extensions:

- Place 20 frogs on the game board. Now you can also alter the number of frogs that can be caught at one time to 1, 2, or 3! See how the game changes again. Experiment with the game by placing various numbers of frogs on the board - try 18 frogs, 15 frogs, 7 frogs, etc. Discuss with students the different strategies involved with those various numbers.

Grade Level:

3-5

Subject Areas:

Mathematics

Setting:

Classroom

Skills:

Communication, strategizing, observation, critical thinking

Prior Preparation:

Laminate the game board. Choose pairs of students to play the game. Set a time limit for each set of partners. This is a companion game to play with rainforest activities.

Vocabulary:

None

South Dakota Education Standards for 4th grade:

Math

4.A.4.1

4.S.2.1