

Skills of tomorrow for children of present: complex future-skill development with the synergy of learning activities, game-based learning and STEAM

GA Nr. 2023-1-HU01-KA220-SCH-000154457



Fishing





Age group	Student number	Duration	Connection to the subjects
7+	groups of 4 to 6 students class size	10-15 minutes	any subject, for example: math, languages, reading and writing, developing vocabulary

Skill focus(s):

Primary Skill Focus:

Resilience

Complementary/Secondary Skill Focus:

- Flexibility
- Problem solving
- Emotional awareness, regulation, and communication



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Brief description, and rules of the implementation of the learning activity:

This learning activity focuses on developing the following four areas of resilience: future-oriented mindset and optimism; flexibility and problem solving; perseverance and self-control; emotional awareness, regulation, and communication; and supportive social relationships. It is a competition-based learning activity. During the challenge, children may experience failures, things may not work as they had planned, but even then, they must control their emotions and do everything they can to help their team win.

This is a skill-based and tactical learning activity. To perform the activity, students work in teams to catch fish (with fishing rods equipped with magnetic "hooks") containing various pieces of information. Each fish is associated with a piece of information or a task, which the participants try to work on in a way determined by the teacher in advance. After successfully completing the task, the activity can continue with new fish and tasks. The winner is the team that can complete the most tasks in the given time.

The activity is explained using a specific example:

For example, if we want to use it in a math lesson, we should split the class into teams of preferably equal number of students. Each team receives the same worksheet with the results of math operations (addition, multiplication). The math operations are written in both side of the "fishes" The task is for the teams to find all the math operations (addition, multiplication), that match the results on the worksheet.

Proposed step by step implementation of the learning activity:

- 1. We throw the fish into the "lake" so that the operations on them are clearly visible. In the basic case, there must be as many operations as there are teams, and each result corresponds to exactly one correct operation. (Changing these conditions makes the activity more difficult.)
- 2. One player from each team fishes at a time, memorizes the math operation on the fish they catch, throws the fish back into the lake, and returns to their team.
- 3. The team members work together to match the math operation on the caught fish with one of the results on the worksheet.
- 4. Then another student can go to the lake to catch another fish.
- 5. The activity takes place for a fixed amount of time, and the team with the most correct math operation matches wins.

Indoor/Outdoor implementation and Classroom layout:

The activity can be carried out both outdoors and indoors. In the classroom, a symbolic "pond" made of blue fabric is needed as the playing area, along with one table per team placed at least five meters away from the pond.

Outdoors, a real water environment can be created, for example, a small pond or a children's inflatable pool filled with water.



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How does this learning activity develop the primary skill?

This activity develops students' resilience by:

- encouraging adaptation, immediate problem solving, and decision making (for example, the student's plan is to find an operation for 28, but the right fish is on the other side of the lake, while the one fish for 35 is very close and can be fished out easily and quickly, so they have to decide immediately which one to choose)
- developing the ability to cope with failure at both the individual and group levels (individual failure may occur, for example, if the student does not fish quickly and skilfully, or catches a fish that already has the been matched, or forgets the operation by the time they return to their team group failure may occur if the task is not completed within the given time or if there are incorrect pairings on the worksheet)
- develops self-control, perseverance, emotion regulation, and communication, because students must continue the activity even when they feel they are going to lose or fail
- strengthens social coping and social support, because in case of failure (either individual or group), students can only achieve success if they support and help each other emotionally
- develops the ability to find alternative solutions to achieve success open mindset - (for example, during a higher difficult level, the group has an opportunity to change the order of the fishing students according to who is good at what - memory, speed, etc.)



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What do we want to achieve regarding the primary skill development (student understanding and/or behaviour)?

As a result of this activity, students:

- understand that mistakes and failure are a natural part of learning and that they can learn from them,
- accept challenges and are more courageous when faced with new or difficult situations,
- become able to rethink and try again after failure,
- become able to gain experience in self-control when facing difficulties,
- actively cooperate with their peers, supporting each other in solving common problems,
- understand that their peers who have failed/been in difficulty need emotional support.

Suggested use, and practical subject-related examples:

The activity can be used in various subject lessons, leisure sessions, thematic weeks, or project days. It is easily adaptable according to the subject or the learning goals. For example:

- In math lessons, the fish are marked with numbers, and students can use them to practice addition, subtraction, or multiplication.
- In language lessons, the fish contain letters or words, which students use to solve word formation or sentence construction tasks.
- In science lessons, the fish display pictures or names of animals, plants, or natural phenomena, and students answer related questions or complete tasks.



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Materials or tools needed for implementation:

- A large blue fabric symbolizing the lake where the fish swim
- Laminated paper fish (with numbers on their bodies and paper clips attached at their mouths)
- One magnetic fishing rod per team (made from a mop handle or stick, with a string hanging down and a strong magnet attached to the end)
- If playing outdoors, a small inflatable kiddie pool filled with water can be used, and the fish can be made from wooden boards, so they float on the water surface
- Dice (e.g., made of foam and larger than usual), two per team if needed

Guiding questions:

- What can we do if we do not succeed in solving a task the first time?
- How can you change your original ideas if the original ones do not work?
- How can you help each other in the team if someone gets stuck?
- How do you feel when you are faced with a difficulty, and how can you cope with it?
- How can you recognize when someone on the team needs emotional support during the activity?
- Why is it important to persevere and try again, even if we do not succeed at first?
- How can you work together so that everyone's voice is equally heard?
- What else would you like to try next time?



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Tips and Tricks for dealing with challenges:

• Difficulty in developing an effective strategy.

Tip: Give teams time to plan and discuss possible solutions, which strengthens creative thinking and cooperation.

The original tactic does not lead to success.

Tip: Allow students to redesign their strategy and adapt to changing conditions.

• Conflict or disagreement within the team.

Tip: Guide students toward finding solutions, supporting communication and problem-solving skills development.

• Observing fair play rules and helping each other.

Tip: Emphasize fair play and encourage teams to adopt a helpful attitude and cooperate.

Difficulty level tailoring:

- Changing the complexity of tasks: Choose simpler or more complex tasks tailored to the age and knowledge level of the students (e.g., using easier numbers or shorter words).
- Modifying the time frame: You can allow more or less time for the tasks to be completed, depending on the children's attention skills.
- Amount and quality of support: Initially, provide more help (e.g., guidance, examples), then gradually reduce it so that students become more independent.
- Simplify or complicate the rules: It is possible to apply more or fewer rules, or to introduce new challenges (e.g., there are many more identical fish than the number of team members; there are fewer fish with the same math operation on it than the number of teams; there is a math operation on only one side of the fish that is not visible when they are in the lake; there is a math operation for which there is no answer on the worksheet).
- Changing the number of the team members



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Debriefing & Reflection questions:

- What worked well in your team?
- How were you able to cooperate?
- What did you experience or learn about yourselves during the activity?
- Did anyone feel that they are now better at adapting to new challenges and changes?
- How could you help teammates who find it harder to overcome obstacles?
- What would you change next time? (rules, behaviour, attitude)
- What was the most difficult part of the activity, and how did you manage to deal with it?
- What new ideas did you try when you faced difficulties?
- How did you feel when your team successfully completed a task?
- Was there a moment when you had to change your team strategy? How did you decide to do this?
- How can you use this perseverance and adaptability in other situations?