

# FILIORUM resource

## From research to practice

**FILIORUM** Centre for Research in Early  
Childhood Education and Care  
University of Stavanger

**U** University  
of Stavanger

### Problem-solving in kindergarten

Problem-solving is about finding solutions to all kind of problems. It can be seen as a basic strategy for addressing both everyday challenges, such as getting dressed, and more specific challenges, such as coding a robot.

*Published 23.02.2024*

[www.uis.no/filiorum](http://www.uis.no/filiorum)



Photographer: Steinar Figved, Skylight

### Why is this important?

Problem-solving is a way of thinking aimed at addressing various challenges. It can help children understand and make choices in both everyday and more complex situations and is considered a key skill in a rapidly changing world. In the Norwegian Framework Plan for Kindergartens, problem-solving is highlighted as an important competence linked to the learning area "Quantities, Spaces and Shapes" (Directorate for Education and Training, 2017, p. 53).

In the video, the four phases of a problem-solving process is presented: understanding the problem, making a plan, executing the plan and looking back.

### Professional development

**Aim:** By using this resource, teachers will gain knowledge of how problem-solving strategies can be defined and observed, and how they can support children's problem-solving abilities.

**Useful for:** Early childhood in-service teachers, early childhood preservice teachers, and university teachers in early childhood teacher education.

**Recommended use of time:** 45-60 minutes.

**Tips for using this resource:**

1. Watch the video.
2. Discuss the reflection questions, preferably in groups.
3. Carry out the activities together with the children (see Activity).
4. Share experiences with each other at the next staff meeting or lecture.



QR-code to the  
video and the  
resource

## Central elements in the video

A problem-solving process consists of four phases: 1) Understanding the problem; 2) Making a plan; 3) Executing the plan; 4) Looking back.

## Questions for reflection

- How do you facilitate activities that help the children gain experience in problem-solving?
- How do you support the children's understanding of a problem?
- How do you help them make a plan?
- What is important for the children to feel safe in executing the plan?
- How do you support the children's evaluation of the plan that was executed?

## Activities

Divide the children into groups. Give each group the task of describing or showing how they should dress on a rainy day. Each child can make and execute their own plan. Then, gather the children in the group and discuss the solutions. Are there more than one possible solution? Were there any plans that could have been implemented more quickly? Consider the different plans with the children.

Invite the children to a coding game with a robot. Start by telling them a fairy tale in which the robot goes from one place to another to find a treasure. Have the children talk to each other to understand the problem and make a plan. Then, have them execute the plan. Discuss with the children and help them reflect on how it went.

## Early childhood research from FILIORUM

This FILIORUM resource draws on the results from the following research article:

Granone, F., Reikerås, E. K. L., Pollarolo, E., & Kamola, M. (2023). Critical thinking, problem-solving and computational thinking: Related but distinct? An analysis of similarities and differences based on an example of a play situation in an early childhood education setting. *Teacher Training and practice*.



QR-code to the article

**Aim:** To gain knowledge of the similarities and differences in the characteristics of the terms "critical thinking", "problem-solving" and "algorithmic thinking" to help ECEC teachers support children's development in these areas.

## Contributing authors

Enrico Pollarolo, Department of Early Childhood Education at the University of Stavanger, Norway. E-mail: [enrico.pollarolo@uis.no](mailto:enrico.pollarolo@uis.no)

Francesca Granone, Department of Early Childhood Education at the University of Stavanger, Norway. E-mail: [francesca.granone@uis.no](mailto:francesca.granone@uis.no)