

<b>Teacher Education Design Principle + code:</b>	7. Teacher education should familiarize teachers with a range of formal and informal inquiry- and creativity-based learning, teaching and assessment approaches and strategies and their use in relation to authentic problems within the areas of science and mathematics. <b>TE: CreatInqPed</b>
<b>Specific Teacher Outcome(s):</b>	<p>7.3 Teachers should be able to recognize and exploit the value of play and exploration in science and mathematics for fostering and extending inquiry and creativity, by for example prompting questions, eliciting ideas, providing opportunities for consideration of alternative strategies during children’s familiarisation with phenomena and events.</p> <p>7.6 Teachers should be able to use strategies for making and building on science and mathematics real life connections and applications for engaging creatively young children in science and mathematics learning.</p> <p>7.8 Teacher should be able to use a variety of scaffolding techniques to promote creativity in science and mathematics, from standing back in order to observe, listen and build from the children’s interests, to intervening with appropriate questioning to support and extend inquiries.</p> <p>7.9 Teachers should be able to use different assessment approaches and strategies and in particular those that involve children in the assessment processes, such as peer and self assessment, dialogue and feedback on progress, in the early years science and mathematics classroom.</p>
<b>Factors linked with:</b>	<p><b>T: Ped;</b>  <b>L: Formal/Informal;</b>  <b>P: Agency; P: Scaff; P: Affect;</b>  <b>M: Cr; M: Explor;</b>  <b>A: Form; A: Peer/Self; A: Evid</b></p>
<b>Type of material (image – interview (int) – classroom extract (class):</b>	Classroom extract (class)
<b>Originating from:</b>	
<b>Country report :</b>	D4.3 – report Germany
<b>Case:</b>	Case 1
<b>Episode:</b>	Building Blocks
<b>Teacher:</b>	Bea
<b>Age Group:</b>	5
<b>Selected episode present in D4.4 Appendix</b>	Yes

Children are creatively engaged  
building the “Leaning tower of Pisa”



Inspired by photographs of real buildings on the wall, the children decided to build the ‘Leaning Tower of Pisa’ using wooden building blocks. The teacher stood back and let the children take the lead. She encouraged the children to express themselves clearly and she valued their ideas.

A photo camera is frequently used for assessment purposes. Children are allowed to use it and to document work and products on their own.

**Classroom extract:**

**C1:** Look, there is the Leaning Tower of Pisa! [*points to a picture hanging on the wall*]

**C2 and C3** look at the picture.

[...]

**C2** wants to build the tower.

**B** [to C2]: Well, C2, now you really have to explain to me how such a Leaning Tower has to be built. I actually have never built one.

**C2** [*places for bricks in front of her and explains*]: You always have to put one like this and another one like that.

**B:** You mean always to one side?

**C2** nods

**B:** And then it won't tumble down?

**C2** shakes his head

[...]

**C2 and B** quickly build the tower which does lean extremely wide to the left. **B** follows **C2's** instructions.

**B:** I'm excited till were we'll get

[...]

*Tower tumbles down.*

**B:** Oh, now it tumbled down. How could that happen?

**C2:** It was too screw maybe.

**B:** Too screw? Hmhm. Why does it tumble down when it is too screw?

**C2** is silent and starts building a new tower

# creative little SCIENTISTS

**B:** Do you think it was too heavy on one side? [...] Shall we try to construct it a little bit less screw this time?

**C2:** The 'Leaning Tower of Pisa' was also screw. About this screw [*again shows the degrees with the help of a brick*]

**B:** Alright, we'll try again. Again to this side?

**C2** nods.

**C3** joins them. **B** moves back and stays in the background.

**C2:** You always do this side and I always do this side

**C3:** Now it tumbles, C2!

**C3:** Oh no!

**B:** Why does it fall in again and again? What do you think?

**C3:** Because there is no space ...for this [*points to the tricky spot*]

**B:** Yes, it doesn't have enough support there, right? We have to think about something else there

**C3** starts to pile up bricks as a sort of supporting pillar.

**C3:** We build a tower from below to fix it.

**C2** starts to carefully slide bricks in the tower from the side.

**B:** Ah, you're adding a supporting step!

**C3:** C2! Good idea!

[...]

**B:** Wow, that looks great already!

End of activity, reflection and assessment after tower finally gave in:

**B:** Maybe it was too heavy on top?

**C2:** If we hadn't placed more bricks on top, it wouldn't have given in

**B:** And why wouldn't it have given in?

**C2:** Because on both sides it was a little bit more. Because [*takes two bricks to show what he means*] they have to protrude a little bit then. At the same time.

**B:** So the weight is equally distributed?

**C2** nods.



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