Initial situation

The parent does not talk to the child about constructing things or the talk is based on how-to aspects of the process.

The actual things the child constructs are fairly simple – the child just follows a certain sequence of actions he/she should perform.

Desired situation

The process of constructing includes lots of talking between the child and parent that is characterised by open-ended questions that are of interest to the child.

The actual things the child constructs are characterized by challenges, i.e. the sequence of actions for reaching the result may not seem clear at a first glace.

Technology 5: Construction

THINKING

Technology 5: Construction

5.1. Questions about 'the bigger picture' of what is being constructed

→ What do you think I might be building here? Do you think it could be something else? Why?

→ What exactly are you building here? Can you take a look at what I am doing? Do you think these two things will work together? Why? (Why not?) Shall we add something to make them more connected? What?

→ Let's look at this part you've already built. How many different things do you think it may be a part of? Let's play "who's got more ideas".

THINKING

Technology 5: Construction

5.1. Questions about 'the bigger picture' of what is being constructed

→ Have you got an idea what you want us to make? What will it look like? Can you describe / draw it? What parts do you think we may need? Are there any we will not need?

→ Look at what I am doing here. Do you like it? What about swapping places? Shall I take over your section and you can take over mine?

THINKING

Technology 5: Construction

5.1. Questions about 'the bigger picture' of what is being constructed

→ Can you guess what I am making / building? Ask me 5 'yes-no' questions and find out. Then I will ask you five questions to guess what you are working on. (Here you can demonstrate to your child a strategy for asking good questions)

→ Look what I am making here. Can you guess which part of (THING) it could be? Why do you think that?

→ Look, there is a round / square / wooden / metal / plastic... element. What do you think we could use it for? In a house / car / castle / space ship you are building?

THINKING

Technology 5: Construction

5.2. Questions related to straying from the instruction manual in order to produce something different

→ (Going through the manual) So, which one do you think we might want to build today? ... Ok, do you think we could change it a little? Which part would you like to change? Now, which step would that be? Will we have enough spare parts for it?

→ Do you think you could still assemble this robot/car/machine, etc. if we don't perform the steps in the same sequence as the manual suggests? Why? (Why not?) Do you think we should change any of the other steps?

THINKING

Technology 5: Construction

5.2. Questions related to straying from the instruction manual in order to produce something different

→ Do you think I will succeed if I first perform these steps, then later go back and perform steps 1 to 5? Why? (Why not?)

→ Do you think we could still make a robot/car/machine if we skipped these 3 steps? What would be different about the product?

THINKING

Technology 5: Construction

5.2. Questions related to straying from the instruction manual in order to produce something different

→ Look at my robot/car/machine, etc. Do you think I followed the manual or changed something? Why? Can you work out which steps I skipped? Are there any new steps I introduced? Would you be able to describe them?
Do you think we could write a new manual so that other children could make our version? Shall we give it a try?

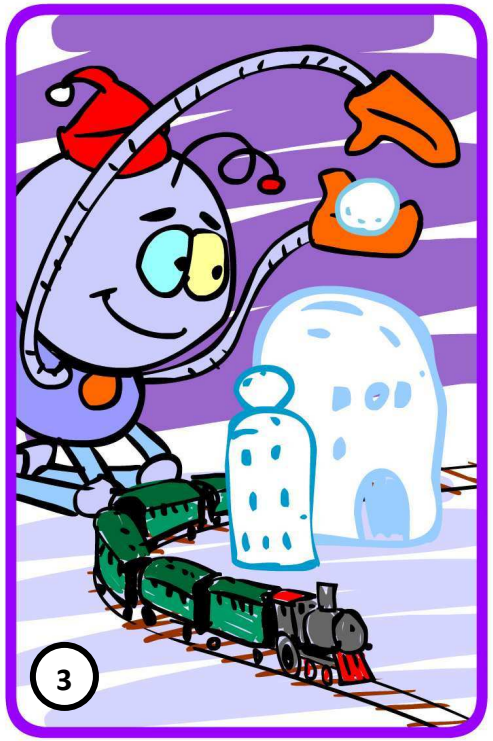
THINKING

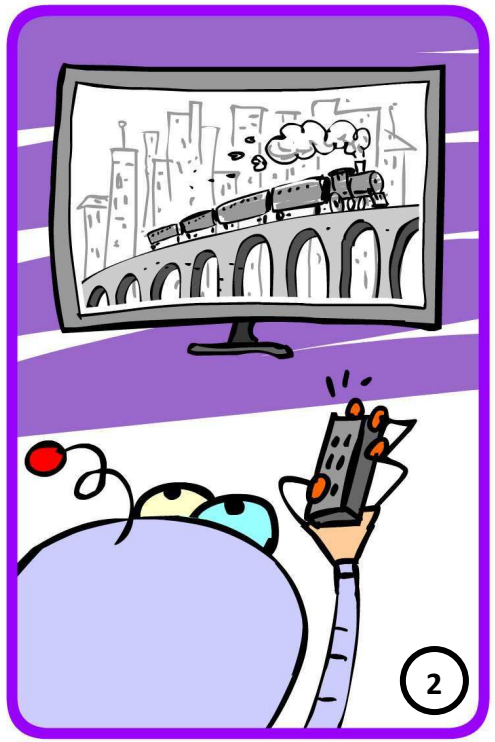
Technology 5: Construction

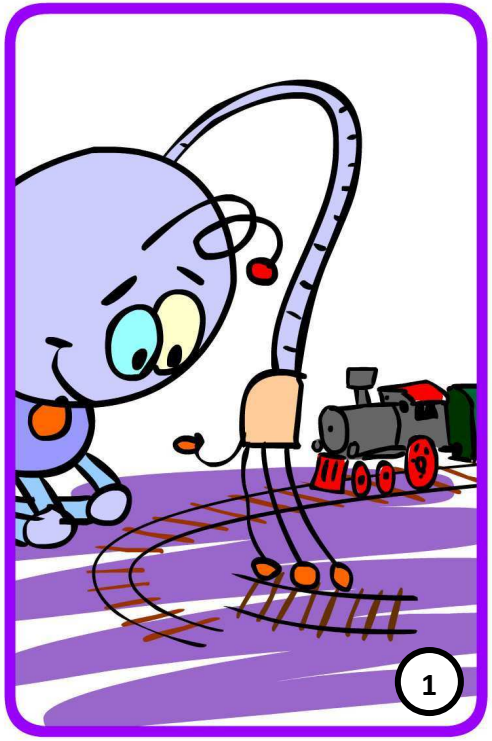
5.3. Questions about levels of difficulty (which stage do you want help with – possibly introduce a limitation, i.e. a child can choose only a limited number of 'helps')

→ Which of these three machines do you think is the most difficult? Why? (you may choose to disagree giving an argument for a different machine, thus provoking the child to think of additional arguments).

THINKING





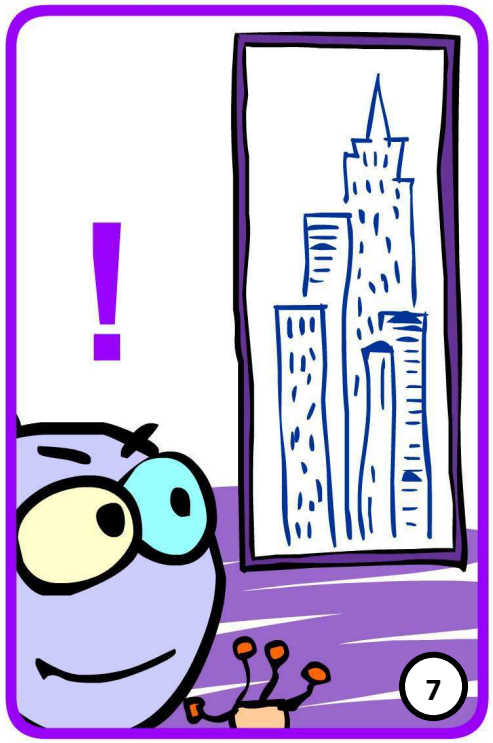


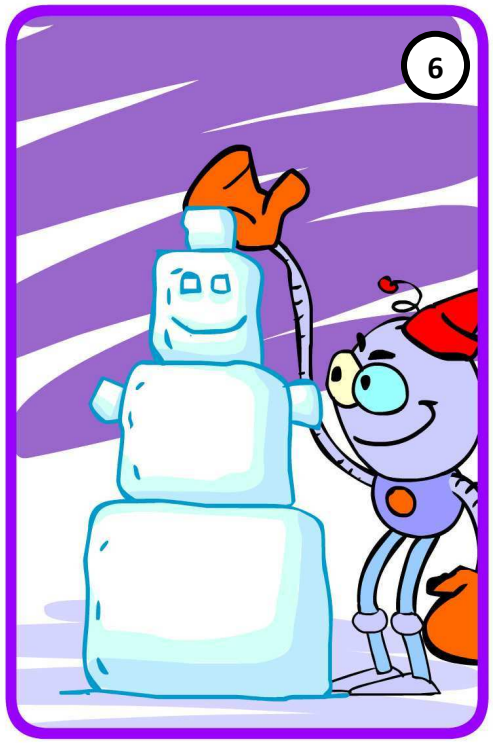
PASS PHASE 0

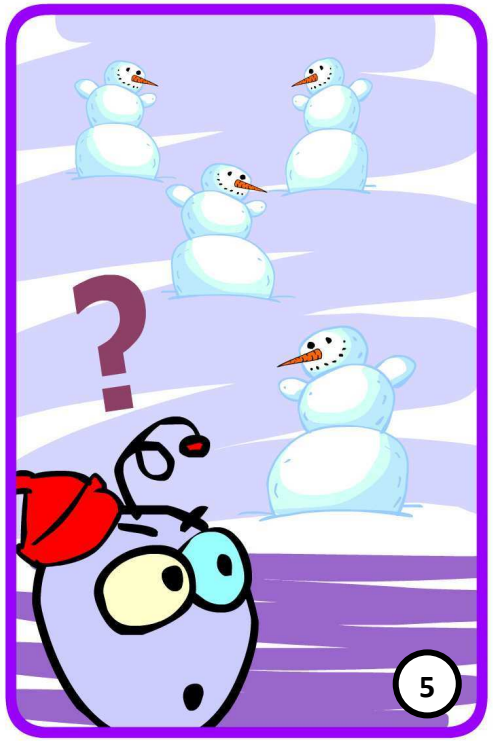
technology 5

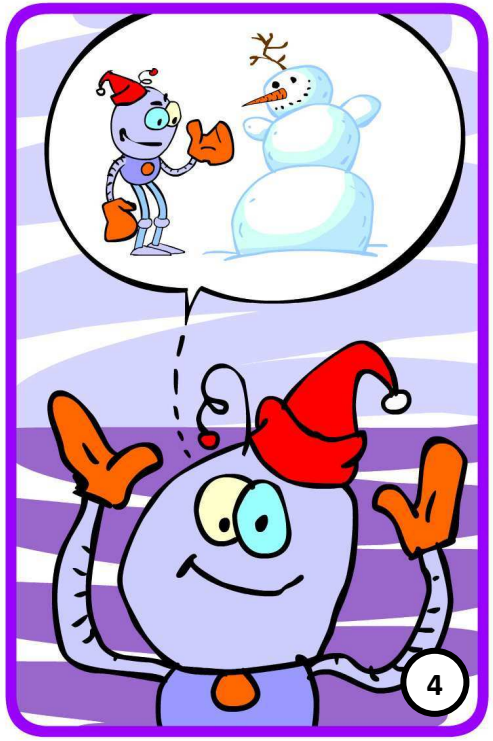
Parents As Successful teacherS

CONSTRUCTION









Technology 5: Construction

5.3. Questions about levels of difficulty (which stage do you want help with – possibly introduce a limitation, i.e. a child can choose only a limited number of 'helps')

→ So, shall we make this Star Wars spaceship? Do you think you could make it by yourself? Ok, I am ready to help. You can ask me to help you at any stage but let's agree that you ask me no more than 3 times altogether.

→ Imagine these blocks (e.g. the blue square ones) are the most precious in the whole box. They are worth twice as much as any of the others. Try to show that when building something!

THINKING

Technology 5: Construction

5.3. Questions about levels of difficulty (which stage do you want help with – possibly introduce a limitation, i.e. a child can choose only a limited number of 'helps')

→ Can you think of a very difficult construction for other children to build using this set? Why do you think it will be difficult for others? Do you remember the task that was very difficult for you? How did you manage to overcome it?

→ Shall we build this ship? Do you think it's going to be difficult? Which parts do you expect to be the most difficult? Why?

THINKING

Technology 5: Construction

5.3. Questions about the degree of change (when comparing something newly built with what we built earlier)

→ I really like this new bionicle you built. His body is quite different from that blue one, don't you think? And what do you think about his legs? Are they different? Which parts would you say have changed the most? Which parts are still similar? Which part do you think was the hardest to build? Do you think the new one can do something different compared to the old one? does he have some special features?

THINKING

Technology 5: Construction

5.3. Questions about the degree of change (when comparing something newly built with what we built earlier)

→ Do you remember which LEGO you liked when you were 3? Why do you think you like a different one now? Are there many differences between these LEGO sets? Are there also similarities?

→ Look at all these sets here (it can be in a shop, an online shop or just a catalogue). Which ones do you think you might like when you are 9? Why? What makes you think that you would still like sets in ... years. Are there sets you are sure you won't like in ... years?

THINKING

Technology 5: Construction

5.3. Questions about the degree of change (when comparing something newly built with what we built earlier)

→ You know what? I've actually got pictures of the railway you built when you were.... Would you like to take a look? Do you like them more than the new ones? Why? Can you find at least a part in the old railway you like more than what we built today?

THINKING

Technology 5: Construction

5.3. Challenges within the activity itself

→ Let's play a game. Each of us has to take something out of this LEGO box (without looking) and build a robot using whatever we've got. Shall we start?

→ Can we now take the blocks and build headquarters for the soldiers? Yes, I know it's a robot set but still? Let's give it a try.

THINKING

Technology 5: Construction

5.3. Challenges within the activity itself

→ Can we now change this railway so that the engine can go back along the track the other way? At the moment it always moves in one direction so we should change something to make it go in two directions.

THINKING

Technology 5: Construction

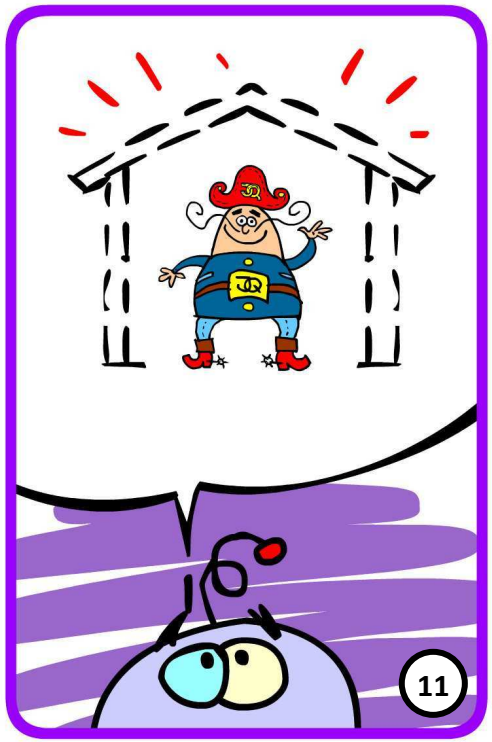
5.3. Challenges within the activity itself

→ I'd like to build a bridge here but we've run out of supports. Any idea for a possible way we can improvise?

→ I can't find a screw-driver for this job. What shall we do? (Get the child to think of possible resources you could use instead of a screw-driver)

→ Look at my tower. Do you think you could build a taller one? Let's try "whose is taller".

THINKING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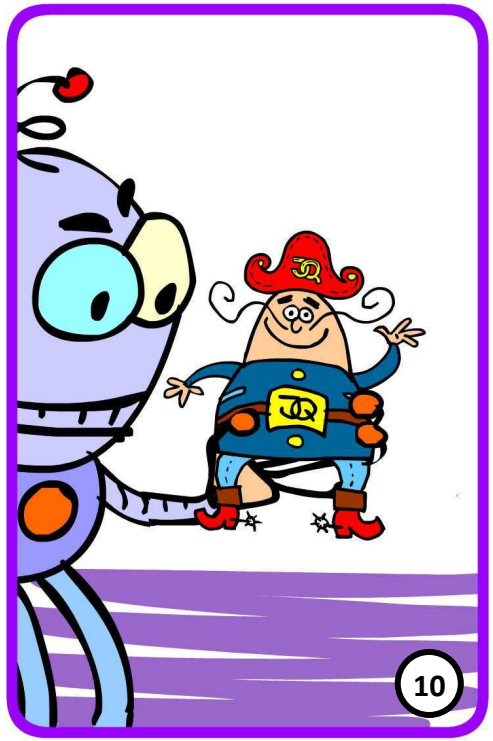
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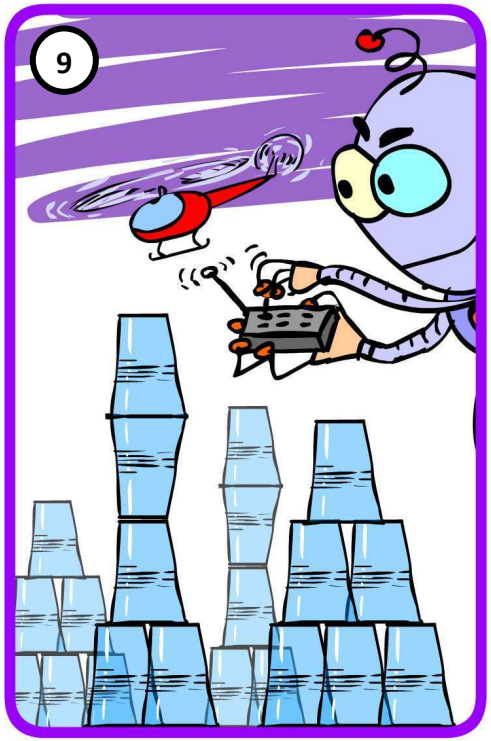
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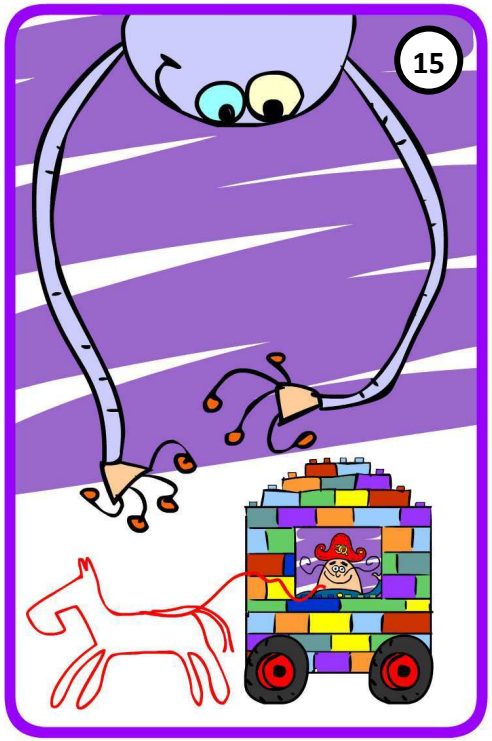
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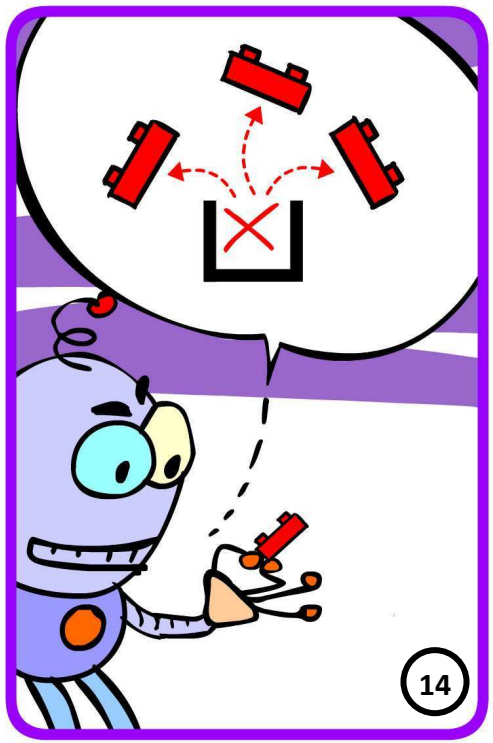
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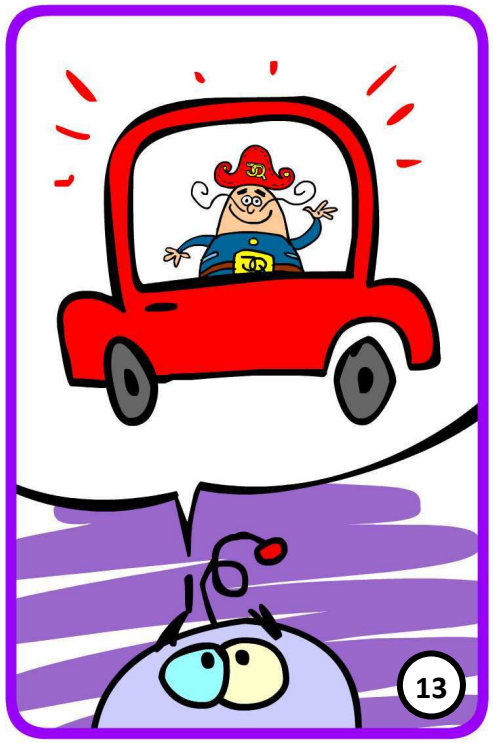
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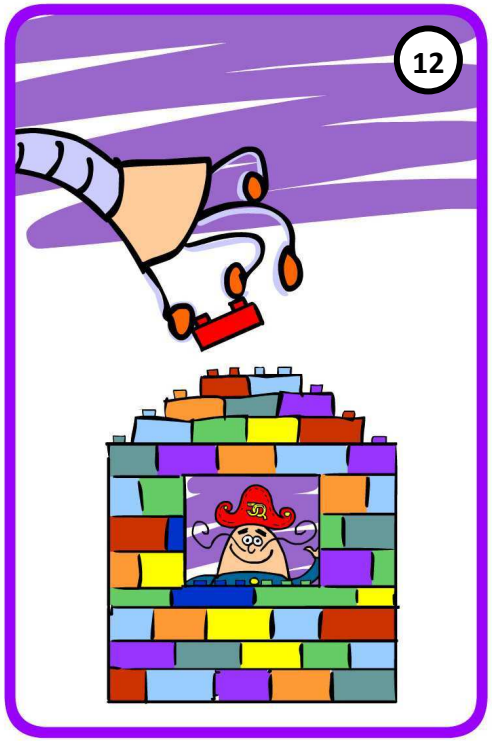
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