



HELP THE TRAIN GET FROM A TO B

ENGINEERING: INVESTIGATION, DESIGN

Every child is different. Do what works best for encouraging each child's exploration of this suggested activity.

OBJECTIVE OF THIS INVESTIGATION:

Children will design and build a train track that gets from a Point A to a Point B.

VOCABULARY:

- design
- test
- move
- change
- straight
- left/right
- turn

MATERIALS:

- trains
- train tracks or blocks to build a track
- masking/duct tape or other way to mark a start and finish

PROGRESSION STEPS (ENGINEERING: INVESTIGATION, DESIGN):

Visit [STEMIE Learning Trajectories](#) for details

- Trial and Error Investigator
- Guided Designer

THIS INVESTIGATION:

- Set the scene for children by marking the start and finish of where you want them to move the train.
- Introduce the challenge and ask how they can get the train from the start to the finish. **(Guided Designer)**
"Can you design a train track to get from here to there?"
- If children struggle to build their track in the right direction, support by reminding children where the finish is.
"Hmm, does this piece get us closer to or further from the finish line? Let's try to get the train closer."
- If children struggle to design a track within the constraints, encourage them to explore placing the tracks in different orientations to explore where the track leads the train. How can they adjust their design to change where the train ends up? **(Trial & Error Investigator)**
- Once children design and build their tracks, pose a new challenge for children that requires they adapt their track design. For example, add in an obstacle such as a toy animal and ask children how they might change their design to get around the animal. **(Guided Designer)**

ADAPTATIONS:

See [A Guide to Adaptations](#) for general ideas and strategies

Environment:

- If children struggle with an adult directing the play, set the investigation up in a new area such as at a desk or a different area of the room so that children have a clearer expectation that this will be a guided activity rather than free play.

Instruction:

- If connecting train tracks or lining blocks up to make a road is a challenge, have children choose which pieces to use and you can help attach/set them up.





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HOW TO CONTINUE THIS INVESTIGATION:

- Challenge children to get the train from the start to the finish more quickly (i.e., make a shorter track).
- Set the start and finish so that children need to design their track to include a turn.

SUPPORT MATERIALS: Use the blank ones to make your own!

