Building Instructions
For a Green Facade Model

Scaffolding System



grüne coole schulen

Co-funded by the European Union



Take a close look at the photo: it will give you an idea of what your model should look like in the end. 🙂

Do you have all the materials?

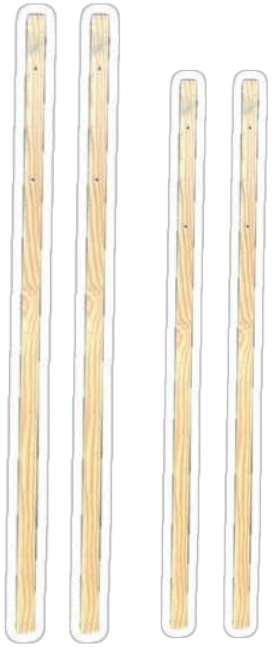
- ✓ 2 x wooden board 600 x 200 x 18 mm
- ✓ 1 x wooden board 564 x 200 x 18 mm
- ✓ 2 x wooden board 200 x 200 x 18 mm
- ✓ 1 x flower box 600mm length
- ✓ 12 x wood screw 30mm
- ✓ 8 x wood screw 20mm
- ✓ 2 x wooden slat 700 x 20 x 10mm
- ✓ 2 x wooden slat 600 x 20 x 10mm
- ✓ String approx. 5 m













12 x



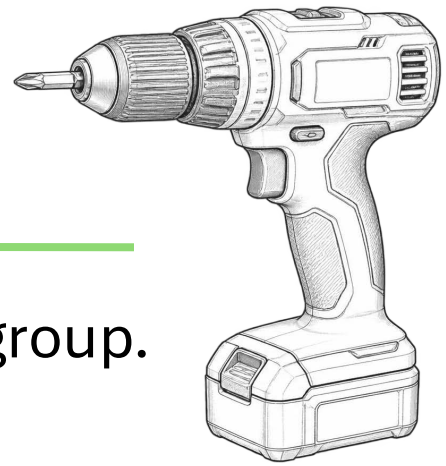
4 x



Do you have all the tools and equipment?

- ✓ Electric screwdriver
- ✓ Bits that fit the screws
- ✓ Wood drill bits (slightly thinner than screws)
- ✓ Solid foam board for use as a base when drilling
- ✓ Red pen
- ✓ Blue pen
- ✓ Folding ruler

Get familiar with the electric screwdriver



AI generated withPerplexity AI

Take a closer look at the electric screwdriver with your group. Go over the following points together:

- What features does the electric screwdriver have?
- How do I turn clockwise, and how do I turn counterclockwise? In which direction does the electric screwdriver need to turn to drive a screw into the wood?
- How do I switch the drill bit to a bit hold?

Help your group members. If you don't know something or you're unsure, ask a teacher!

Step 1: Build a wooden box

- Place the flower box upside down (with the opening facing down) on the floor.
- Arrange the boards as shown in the photo. The two short, outer boards rest on the edge of the flower box.
- Pay attention to the specified sizes of the boards! As shown in the photo.
- Draw the red lines on the short, outer boards, as shown in the photo on the left.







- Take of the short boards.
- Draw a second blue line below the red line, spaced apart by the thickness of the board (18 mm), as shown in the photo.



- As shown in the photo, draw two crosses between the red and blue lines to mark where to pre-drill.



Tip: Why pre-drill?

This will prevent the wood from splitting when you screw the screws in later.

Always make sure to place something underneath when pre-drilling!

- Use the wood drill bit to drill holes in the marked spots.
- Make sure you drill straight!

- Screw the short boards to the edge of the longer board in the middle using two long screws (30 mm).
- Work as a team! One person holds the short board in place between the lines, against the edge of the longer board. Another person screws the short board to the edge of the long board.
- Repeat the process with the second short board on the other side.
- Turn the structure over: it should now look like the photo on the right.







- Take two long boards (600 x 200 x 18 mm). Mark four points on each board as shown in the photo.
- **The marks should be no more than 10 mm from the short edge of the board. Use a folding ruler!**
- Use the wood drill bit to drill holes in the marked spots. **Remember to put something underneath!**



- Place a long board on top of the prepared box, as shown in the photo. Make sure it rests flush against the edges of the two small boards!
- Screw the long board into place with 4 long screws (30 mm) through the pre-drilled holes.
- The result should look like the image below.





- Turn the box over and repeat the previous steps with the other long board.

- Now you've covered the flower box with wood on the bottom and all four outer sides.

Great! 👍

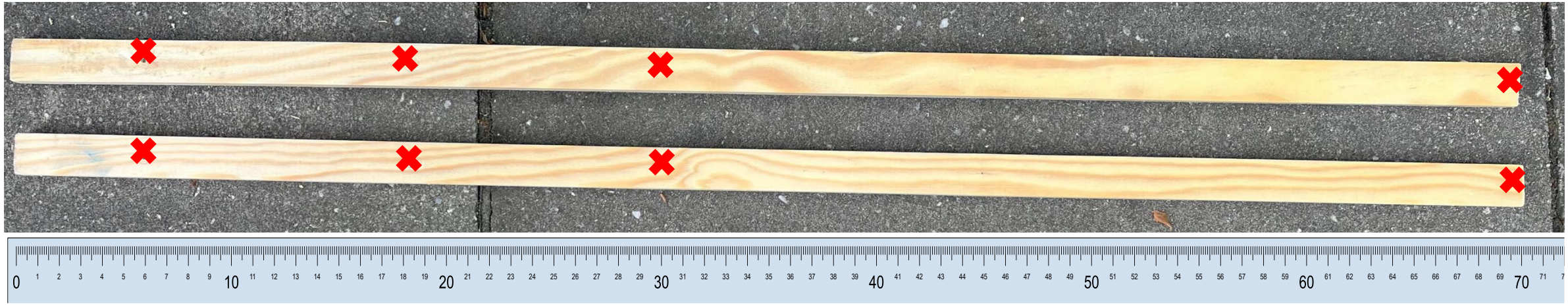




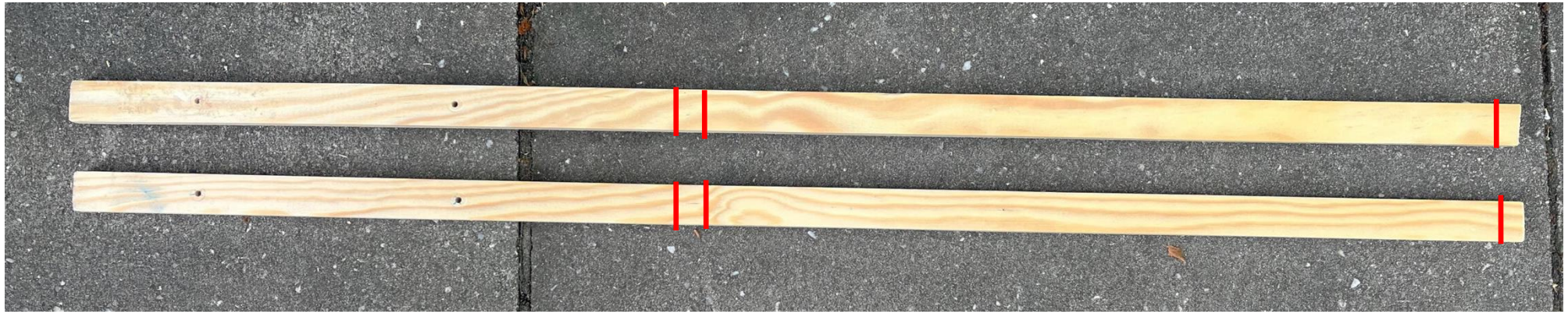


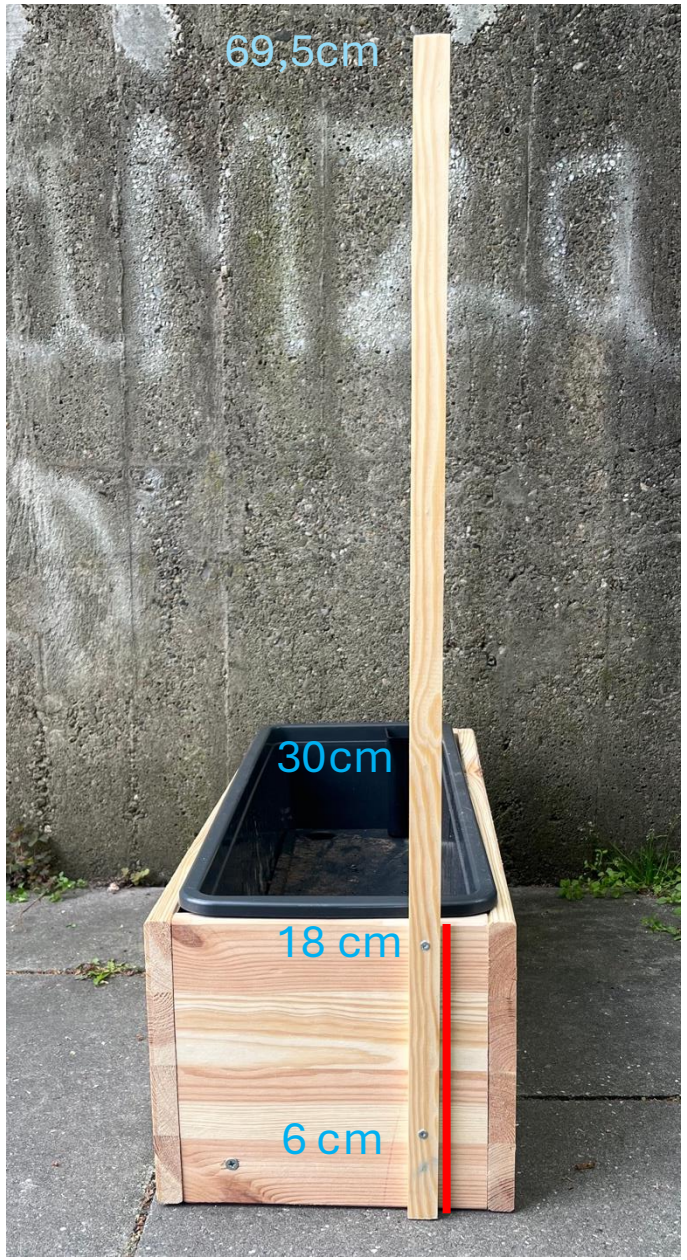
Step 2: Construct the scaffholding system

- Take the two longer wooden slats (700 x 20 x 10 mm) and mark them as follows:
  → at 6 cm
  → at 18 cm
  → at 30 cm
  → at 69,5 cm



- Use the wood drill bit to drill holes in the marked spots. **Remember to put something underneath!**
- Mark the spots around the holes at 30 cm and 69.5 cm, as shown in the photo. The marks should be 0.5 cm away from the holes. Use the photo as a guide.



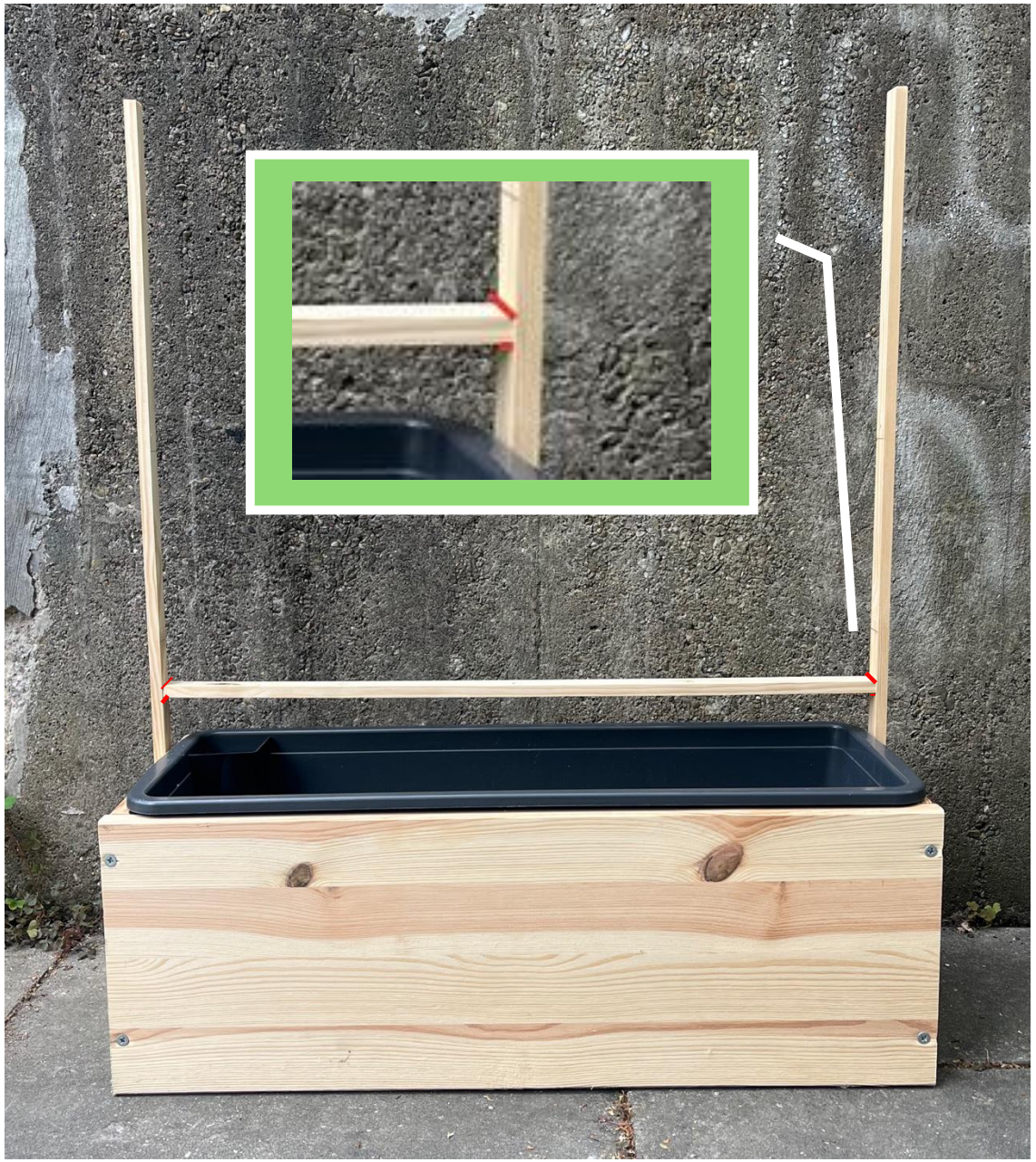


Screw the slats to the box:

- Draw a line 4 cm from the edge of the box (as shown by the red line in the photo).
- Hold the wooden slat against the red line. Screw the wooden slat to the wooden box using shorter screws (20 mm). The markings around the holes face inward toward the wooden box.
- Work as a team: one person holds the wooden slat against the wooden box while another person screws it in place.

- Repeat the process with the second wooden slat on the other side of the wooden box.
- The wooden box with the wooden slats screwed onto it should look like the one in the photo.





- <u>Take a short wooden slat</u>

  (600 x 20 x 10 mm).

- Start with the bottom marks.

- Align the short wooden slat with the markings on the outer long wooden slats, as shown in the photo.





- Work as a team again! One person holds the short wooden slat in the correct position against the markings on the outer slats.
- The other person screws the wooden slat in place on both sides using the shorter screws (20 mm).
- The scaffolding should now look like the one in the photo below.





- Repeat the process: Take a the other short wooden slat (600 x 20 x 10 mm) and align it with the marked lines and pre-drilled holes.
- The short wooden slat should be flush with the ends of the two outer long wooden slats.
- Work as a team again! One person holds the short wooden slat in place while the other person screw it in place with two screws (20 mm).
- The scaffolding should look like the one in the photo below.

- Take the string.
- Take one end of the string and tie it to one of the top corners with a double knot, as shown in the photo.



- Tie the string in a zigzag pattern around the top and bottom slats, as shown in the photo.
- Tie the string securely to the opposite top corner with a double knot.
- Great, the plant scaffolding is now ready! 👍



Step 3: Potting the flower box



Now it's time to pot the flower box:

- Choose a suitable indoor climbing plant (such as a pothos)
- Tip: Use **peat-free** potting soil **– this helps protect wetlands and the climate** 😇
- Care: Water the climbing plant regularly!

Imprint

This material was developed as part of the Erasmus+ project **Green Cool Schools GROW Europe**.

https://www.greencoolschools.eu

Authors: Wibke Niels und Juliane Eich, Institut für Biologiedidaktik, Universität zu Köln

Photo credits: Unless otherwise stated: Institut für Biologiedidaktik, Universität zu Köln

Unless otherwise stated, this material is licensed under **Creative Commons Attribution–NonCommercial–NoDerivatives 4.0 International (CC BY-NC-ND 4.0)**.

This material may be reproduced and shared for non-commercial purposes, provided that it remains unchanged, the original authors and source are acknowledged, and a reference to the licence is included. The distribution of modified versions is not permitted under this licence.

Additional Permission for Educational Purposes

Teachers, schools and other educational institutions are permitted to adapt this material for non-commercial teaching and educational purposes and to share adapted versions within educational contexts, provided that the original authors and the Green Cool Schools project are acknowledged and any modifications are clearly indicated.

Adapted versions must not be presented as original materials of the Green Cool Schools project.

This additional permission applies exclusively to content for which the necessary usage rights are held.

Further information about the licence: https://creativecommons.org/licenses/by-nc-nd/4.0/

Disclaimer

The content has been prepared with the greatest possible care. However, no guarantee is given as to its accuracy, completeness or currency. Liability is excluded to the extent permitted by law.

Suggested Citation

Niels, Wibke, Eich, Juliane (2025): *BuildingInstruction_ Modell_ScaffholdingSystem*. Erasmus+ Green Cool Schools. Edited by Büro für nachhaltige Kompetenz B-NK GmbH; Institution2. Available online at: https://www.greencoolschools.eu

Co-funded by the European Union

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or OeAD-GmbH. Neither the European Union nor the granting authority can be held responsible for them.