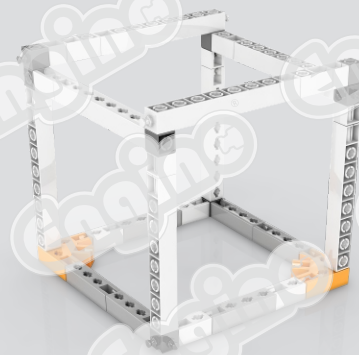


build an ox-driven plough

Learn about the history of agriculture and how people used draft animals (e.g. oxen or bulls) to cultivate the soil. Recreate a scene of a common farming technique from the past by constructing this exciting model of an ox-driven plough.

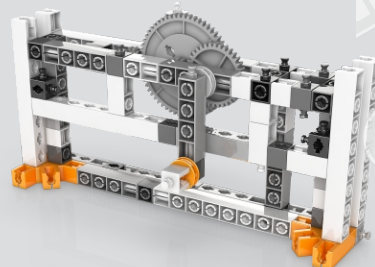
- What is the history of agriculture?
- How was the ox-driven plough used?



build a cube

Different shapes offer different kinds of rigidity. Experiment with line shapes (triangle and square) and a 3-dimensional shape (cube) to learn how to modify and strengthen structures. This way you will know more about the construction of your greenhouse.

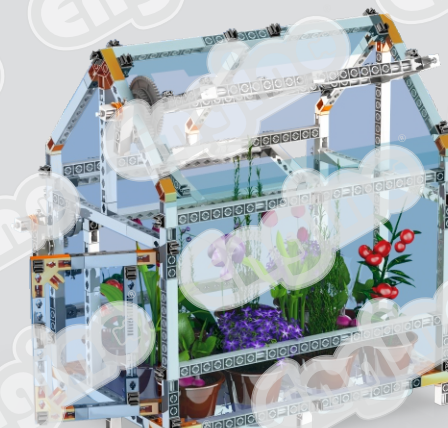
- What is the benefit of triangulation?
- How can you strengthen different shapes?



build a gearbox

Build this simple model of a gearbox and experiment with different gear set-ups. Learn how to calculate the gear ratio even when more complex set-ups are assembled. The windows of your greenhouse open and close using gears.

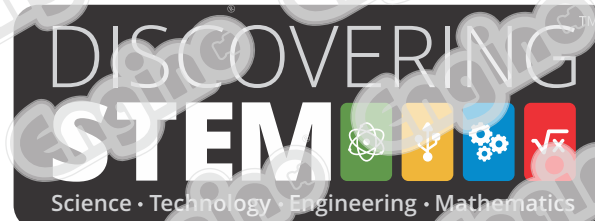
- What is a gearbox?
- How to calculate the gear ratio?



build a greenhouse

Use this fully functional greenhouse to execute experiments and learn the basics of how to germinate seeds. Learn about the factors that affect the growing of plants and keep the conditions optimal inside the structure to become an expert gardener!

- How do seeds germinate?
- What factors affect the growing of plants?



BOTANIC LABORATORY

photosynthesis, ventilation & gardening

Learn more about greenhouses and the life cycle of plants and become a young agriculturist! Build this amazing, fully functional Greenhouse model and see your seeds fertilize and grow! Control the conditions inside your Greenhouse and monitor how plants are affected by temperature, moisture and light levels. Take care of your plants and provide them with proper ventilation through the Greenhouse's movable parts. With this set you can build 4 different models, including an ox-driven plough, a cube, a gearbox and of course your very own botanic laboratory in the form of a real-life greenhouse. Printed building instructions for 1 model are included and 3 more models are available online and through the free kidCAD app for smart devices. The printed booklet presents the background theory and amazing facts about the history of agriculture, how plants can provide food for themselves through photosynthesis, how they "breathe" and evaporate water and many more! A Quiz section is also available to challenge your newly acquired knowledge.

11 pages of theory and amazing facts!

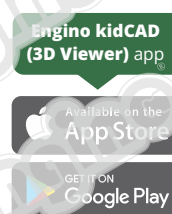
3 pages of experimental activities!

2 pages of revision quiz!

21 pages of step by step instructions!



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Product Code: **STEM47**

Edition 3.0



4 models to build

9+ years

master engineers

3 online instructions

1 printed instructions

Discovering STEM

The purpose of STEM education - Science, Technology, Engineering and Mathematics - is to provide students with the necessary skills, knowledge and experience in order to cope with the technological challenges of the future. Modern pedagogical theories suggest that the study of engineering should be incorporated in all other subjects, starting from elementary level. DISCOVERING STEM series offers a practical solution for facing all these educational issues, aiding the teacher to engage students in STEM disciplines in a fun, exciting and interesting way! The educational packages are also ideal as a home learning tool! The series covers a broad area of subjects: Mechanics and Simple machines, Structures, Newton's Laws, Renewable Energy and even Programmable Robotics.

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www.engineo.com/instructions/stem47

B

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Contents



Theory

- 03 What we will learn
- 03 History of agriculture
- 05 Definition of plant
- 07 Respiration
- 07 Transpiration
- 08 Photosynthesis
- 09 Life cycle of plants
- 10 Importance of plants
- 11 Greenhouse
- 12 Greenhouses' types
- 13 Engino® Greenhouse



Experiments

- 14 Growing seeds (germination)
- 15 Effects of temperature and water
- 16 Effects of sunlight and oxygen



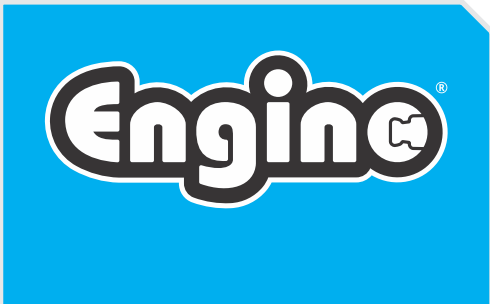
Quiz

- 17 Exercise 1
- 18 Exercises 2-4



Building Instructions

- 20 Greenhouse





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