Introduction

LEGO Education is pleased to bring you the 9656 Early Simple Machines set that provides ideal opportunities for young children to develop an understanding of science concepts through investigation and hands-on activities.

Who is it for?

The material is designed for use by teachers of Key Stage 1. No prior science training is required – only creativity and enthusiasm.

Working alone or in pairs, children of all abilities from 5 years and up can build, enjoy and learn from the 8 models and activities.

What is it for?

LEGO Education Science and Technology solutions enable young children to behave as young scientists, by providing them with tools and tasks that promote scientific enquiry. Using our solutions, children are encouraged to pose 'What if ...?' questions. They make predictions, test the behaviour of their models, and then record and present their findings.

What is it?

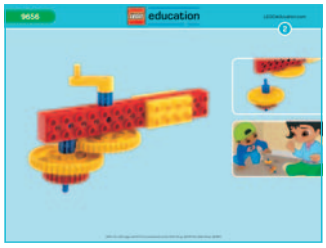
The 9656 Early Simple Machines set comes in a practical and durable storage box. Inside the storage box you will find the 101 bricks, 8 building instructions numbered 1-8, and an element survey that displays the set's unique mix of LEGO® DUPLO® bricks. Exclusive for this product is a plastic punch-out sheet with eyes, sails, scales and wings. The activity pack contains 8 main activities and 4 problem-solving activities.

The 9656 Early Simple Machines set is designed for easy use, easy classroom management, and lots of fun!

How to use it?

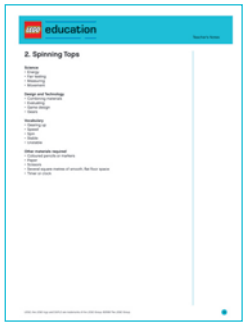
Building instructions

The 8 building instructions support the children's building process step-by-step with clear instructions on how to build each model. To interpret the 2D building instructions and turn them into a 3D model can be a demanding task and some children may need your help and encouragement.
We recommend children try to build the exact models from the cards to ensure that the model will perform as intended for the activity. The building instructions will support the development of technical knowledge and understanding.



Teacher's Notes

In the Teacher's Notes you will find 8 activities, including connect stories, and questions and further ideas for investigating – all ready for you to introduce to your children.



Every activity is carefully linked to the overall objectives of the Science, and Design and Technology curriculum. At the start of each activity, we list outcomes unique to that particular activity. The outcomes that are common to all activities are listed in the section called 'What are the curriculum highlights'.
We also list the specific vocabulary focus and the additional materials needed for each activity.

The lessons follow LEGO Education's well-tested methodology – the 4C approach: Connect, Construct, Contemplate and Continue. This enables you to progress naturally through the activities.

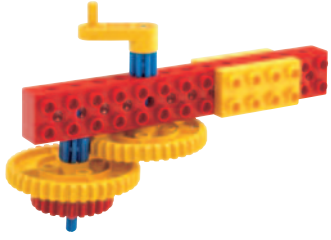
Connect

A short story introduces Sam and Sara and provides the children with the opportunity to help identify the problem and investigate how best to come up with a solution.

You may choose to read the story or retell it in your own words. Please also draw on your own experience and current events from both near and far to set the scene for the children.

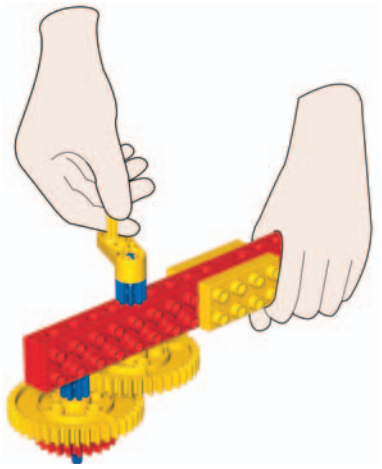
Construct

Using the building instructions, children build models embodying the concepts related to the key learning areas. Tips are provided for testing and making sure each model functions as intended.

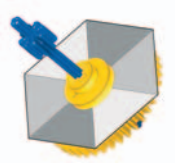


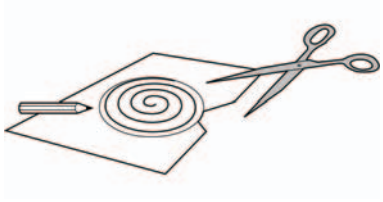
Contemplate
This involves children carrying out scientific investigations with what they have constructed.
Through their investigations the children will learn to identify and compare test results. The activities will introduce them to the concepts of measurement, speed, balance, mechanical movement, structures, force and energy. They will be encouraged to describe the outcomes of their investigations. You will find all test results presented in the same chart as in the worksheet.
It may be a good idea to carry out the tests several times as test results may vary.
A series of questions are included to further deepen the children's experience and understanding of the investigation.

This phase also includes the possibility for you to start evaluating the learning and the progress of the individual child.



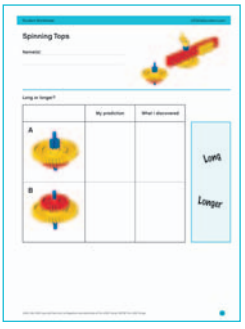
Continue
Ideas are provided for further investigations drawing on the children's creativity and previous experiences. The children will experiment, design additions or changes to their models, and invent related games.





Worksheets for the children
The illustrations in the worksheets will guide the children to use and explore their models without too much assistance. The children will predict, test and describe outcomes using words presented in the worksheet. These words will encourage the children to use the correct vocabulary to describe concepts such as balance, direction, distance, speed and time.

The worksheets can also help you in assessing the individual child's level and achievement. They also form a valuable part of the children's log books.



Problem-solving activities
Each of the 4 problem-solving activities starts off with a short story supported by an illustration featuring the problem that needs solving. To solve the problem a design brief states a number of criteria the children have to incorporate into their model solution. The 'Fair testing and fun' questions and suggested answers help focus the models to meet the design brief criteria and support the test situation. A suggested model solution helps you, the teacher, help the children. It is not the one and only solution to the problem! Children must always be encouraged to build their own solution to a given problem.

If possible, take a picture of the children's model solution and have them explain how they have solved the problem. Keep the picture as inspirational material for future problem solvers.

How much time do I need?
Each activity can be carried out within a lesson. A double lesson is ideal for more in-depth investigations of the key learning area and to allow children to make creative variations of their own. For the open-ended problem-solving activities children may need more time to build and explain their models.

Enjoy!
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