



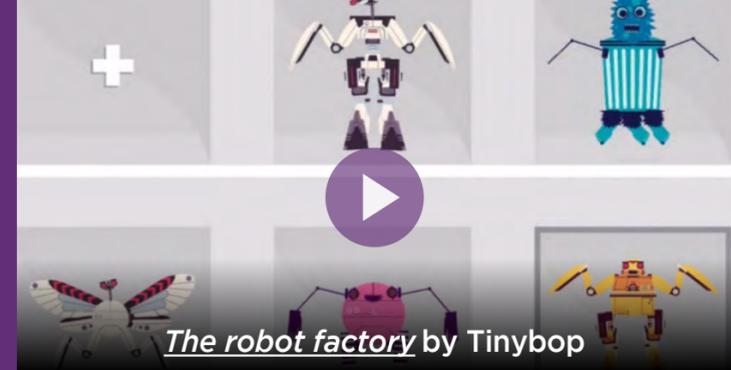
Improving everyday life with robotics. *Engibear's dream*

Australian curriculum springboard

Mathematics
Science



Stage 2
Years 3-4



The robot factory by Tinybop

Science K-10 (SciTech K-6)

Outcome: *Products*

A student:

- describes how products are designed and produced, and the ways people use them [ST2-16P](#).

- examine how people use applications of science and technology in their work, e.g. builders, farmers and graphic designers.

Content:

There are various processes involved in the ways products are designed and produced. Students:

- examine the process used to produce an existing product by creating a flowchart from design to producing the finished product

People use products in a variety of ways.

Students:

- explore the ways existing products can be reused and recycled to incorporate environmental considerations, e.g. products designed

Working Scientifically

ST2-4WS: investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken.

Working Technologically

ST2-5WT: applies a design process and uses a range of tools, equipment, materials and techniques to produce solutions that address specific design criteria.

Mathematics K-10

Outcome: *Data*

A student:

- selects appropriate methods to collect data, and constructs, compares, interprets and evaluates data displays, including tables, picture graphs and column graphs [MA2-18SP](#)

Content:

Students:

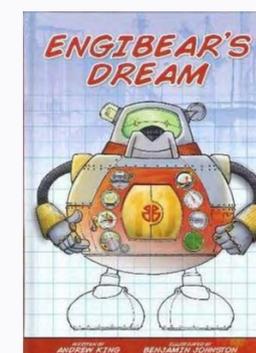
- collect data, organise it into categories, and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies
 - use computer software to create a table to organise collected data
 - use graphing software to enter data and create column graphs that represent data
 - choose an appropriate picture or symbol for a picture graph and state the key used
- interpret and compare data displays
 - describe and interpret information presented in simple tables, column graphs and picture graphs
 - make conclusions about data presented in different data displays.

Advice, implementation support and resources for NSW DoE teachers: [AC - NSW syllabuses for the Australian Curriculum](#) [intranet].

Review:

Engibear's dream

KING, Andrew & JOHNSTON, Benjamin
Little Steps, NSW, 2012
ISBN 9781921928901 [A821]



Engibear's dream follows Engibear in his journey to create a robot to help him get his work done. Through a delightful literary experience catering for early primary aged children, readers are exposed via rhyme to an array of technical vocabulary that lends itself to STEM

learning. As Engibear modifies Bearbot through a series of prototypes in his quest for perfection, the focus is on concepts of product planning and design. Detailed design blueprints provide a visual stimulus to support understanding and encourage rich discussions. The book aligns strongly with content from the *Products* substrand in Stage 2 in the *Science K-10 (incorporating Science and Technology K-6) syllabus*. In the *Mathematics K-10 syllabus*, opportunities to link to the *Number, Two-Dimensional Space* and *Data* substrands are also present. A. Lee

USER LEVEL: Stage 2

KLA: Mathematics; SciTech

SYLLABUS: Mathematics K-10; Science K-10 (SciTech K-6)

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Teaching and learning opportunities:

- Investigate household/school objects and their uses
- Discuss which objects could be replaced by a robot
- Watch [If I could build a robot](#)
- Identify a scenario where a robot could make life simpler
- Design a robot. Use the [Dreaming](#) activity paper to sketch initial designs
- Test the suitability of materials and display data in a table or graph using computer software to show the pros and cons of each material tested
- Using recycled materials, construct a robot to serve a purpose
- Design a robot with [The robot factory](#) app
- Invite an inventor in for a class discussion
- Investigate the different uses of robots in various fields, e.g. medical, agricultural, corporate
- Visit a factory and use [Popplet](#) to document the production of a product.