

Technology Education

Paper Plane Production

Teacher Package

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Introduction

Welcome to the teacher package for Paper Plane Production. Designed for year 3 and 4 students, this online resource focuses on the digital technologies concepts of process and production skills in relation to both time and resource management and mass production.

Designed as a whole class learning activity, Paper Plane Production draws upon the general capabilities strand of information and communication technology, through the use of an animated challenge guide. The challenge laid down through the animation requires students to explore the concept of time and resource (in particular people) management, with a particular focus on production lines. Students will then further explore and practice the management of time and resources when working on a mass production.

Upon completing Paper Plane Production, students should not only be aware of mass production and some of the skills required, but also have a working understanding of time and resource management in a production setting.

Standards

The Australian Curriculum supplies teachers with particular learning standards. The standards for year 3 - 4 that are addressed in Paper Plane Production are:

Design and Technologies Process and Production Skills

Content Description (customised)

Collaboratively plan a sequence of production steps when making designed solutions.

Elaborations (customised)

Managing time and resource (people, job) allocation throughout production

Identifying some of the steps in a mass production process

Student Learning Outcomes

By the end of Paper Plane Production, students should be able to:

- Explain the benefits of a production line
- Successfully ascertain the best management of time and resources for a mass production

- Have a developing understanding of the steps involved in mass production

How to use the resource

Paper Plane Production has been designed as a whole class activity, with students working in both smaller groups and one class group. Teaching strategies employed within this unit of work include:

- Interactive, engaging online learning
- Inquiry based learning
- Collaborative learning
- Experiential learning
- Active learning
- Games and simulations
- Learner-centred teaching

Teacher Preparation and Resources

The class will need

- [Paper Plane Production](#) video
- Platform to view above resource
- Tennis balls (enough to fit in half the buckets)
- Buckets (pair of buckets per 5 students)
- A4 paper for paper aeroplanes
- Stopwatches (enough for each group)

Prior Knowledge

Students are familiar with group work and ideally are confident readers.

Where to from here?

After completing Paper Plane Production, students may wish to further explore the steps involved in mass production and management of other tools and resources. One suggested activity is to explore food production in both small and mass production settings. See the Australian Curriculum for further advice.

Ball & Bucket Race

Aim:

Work out the quickest and safest way to get the tennis balls from one bucket to the other.

Equipment (10 students):

2 buckets

Tennis balls to fill one bucket

Stopwatch

Space to run

Instructions:

- 1) Set up the buckets, one full and one empty, 5 meters apart.
- 2) Have one student transfer the balls to the empty bucket, one at a time. Time it.
**** Dropped balls are considered damaged and must be left where they fall**
- 3) Have all the students transfer the balls, one ball at a time. Time it.
- 4) Try it with 2 students filling each bucket, like a relay race. Time it.
- 5) Continue the above step, but add students until all 10 (or 9 if one has the stopwatch) are part of a production line.
- 6) Determine which way was quicker and safer (take into consideration dropped balls, running students, etc).

Paper Plane Production

Aim:

Determine the most efficient way make a bulk amount of paper planes.

Equipment:

A4 paper (ream)

Stopwatch

Instructions:

- 1) Class discussion of different options for making paper planes – how many people, what does each person do, how to fold a plane, etc.
- 2) Divide into groups, each group selects an option.
- 3) Organise the desks for a production line per group.
- 4) After a practice run, each group folds as many planes as they can in 5 minutes.
- 5) The group with the most planes is the best option for the Paper Plane Production.