

GETTING STARTED

AN INTRODUCTION TO WANTED! ENGINEERS FOR SALAZAR CARNIVAL

Science Alberta Foundation is pleased to make *Wanted! Engineers for Salazar Carnival*, one of our *Science-In-A-Crate* programs, available in your community!

Wanted! Engineers for Salazar Carnival is a science program in which participants become mechanical engineers and are encouraged to develop an understanding of and interact with simple machines, specifically wheels and levers, found at a traveling carnival.

This program provides an introduction to how we use and interact with simple machines, like wheels and levers, in daily life. By exploring and investigating carnival rides, the participants will learn how wheels, gears and belts work together to provide movement, and how different levers can help to transfer movement from one place to another. Participants will be able to access background knowledge and experiences to learn introductory terms and concepts of the mechanical world around us. Participants are encouraged to record their observations about how things work, and to make recommendations based on the conclusions they reach.

The *Wanted! Engineers for Salazar Carnival* crate meets the grade 4 science curriculum as well as various math and social studies outcomes. This activity guide provides the background information necessary for teaching about wheels and levers at the Division II level as well as detailed instructions and answers for each activity. The activity topics are as follows:

Job No. 1 - Ferris Wheel

Wheel and belt drive system

Job No. 2 - Merry Go Round

Gear systems, 90° (perpendicular) gears

Job No. 3 - Swing Ride

Using gear systems to increase/ decrease speed

Job No. 4 - Drop of Doom

Using pulley systems to use less force

Job No. 5 – Airborne Acrobats

First-class levers, altering the fulcrum position

Job No. 6 - Ghost Carts

Comparing rollers and wheels and axles

Job No. 7 - Creature Crate Tool

Comparing first-, second-, and third-class levers