

## Unit 2: Plants for Food and Fibre *End of Unit Project*

You must choose **1** of these projects and complete it **alone**

### Description of Project Goals

1. To grow a **Magic Beanstalk**. ( Just like Jack! )
2. To design a **3D model of a Plant** that can survive in an extreme environment
3. To design and construct a model which illustrates different **Farming Practices in Alberta**.

### Background:

#### **Magic Beanstalk**

Hydroponic or Aquaponic

You are required to grow an impressive beanstalk. (One that may even rival JACK's famous beanstalk) The size and health of your plant will show your mastery of what it takes to grow plants for Food and Fibre.

You will be given a lot of latitude in your discovery of the ultimate secret formula. The type of soil-less medium you use should be easily duplicated by others.

Plant Species will be provided.

Your bean plant should be started on the day assigned and brought into school on the day it is to be judged.

Growing Plants Indoors

Fertilizers

Growing Houseplants

#### **Extreme Plants**

Adaptations of plants to extreme environmental conditions

The purpose of this choice is to reinforce the concepts of structural adaptations in plants (native vs non-native plant species).

Invasive Plant Species

Plant Adaptations

Rainforest Plants

Webquest

Prairie Plant Adaptations

You are to choose the extreme environment and then design and build a new plant species that you think will be able to survive in that environment.

#### **Farming Practices**

Ref. P. 140-142, 158-160

There are many different types of **farming practices** that help to sustain the soil and promote high crop yields. Using a 3D model show how each of the practices would look on a typical farm in Alberta

**References for additional information:**

Conservation Buffer Types

Conservation Tillage Techniques

Contour Farming

Zero Tillage

Organic Farming

Best Practices

Farming Practices and Water Quality



Wetlands

### Specifications:

#### **Magic Beanstalk**

**Create a soil-less medium to grow a bean plant:**

... a hydroponic or aquaponic operation

**Testing:** Your beanstalk will be measured from the bottom of the roots to the highest tip of the stem. (40%)

**Project Report** should include:

- *Daily Journal* (representing what you did and what you observed) (40%)
- *Planting Details* (10%)
- *Photographs, or Illustrations*, showing the development of your plant over time (10%)

#### **Extreme Plants**

**Design and build:**

... a model of a *new plant species* that can survive in an extreme environment

**Materials:** Choice of materials is up to you.

**Size Restrictions:** Plant model must not exceed 25cm<sup>2</sup> base and 30cm in height.

**Model Components:**

- Plant should be realistic.
- Labels should indicate the type of adaptation that the plant has and how it helps it survive in the extreme environment you have placed it in
- Environment should reflect the extreme conditions you are setting.

#### **Farming Practices**

**Design and build:**

... a model of **Farming Practices** - Past and Present

**Materials:** Choice of materials is up to you.

**Size Restrictions:** Model must not exceed 50cm<sup>2</sup> base and 10cm in height.

**Model Components:**

- Model should display the farming techniques that are outlined in the textbooks:  
**SF** 140-142, 156-159.  
**SIA** 143-148
- Brief explanation of the practice should be included in the model

### Evaluation:

**Model 60%**

Self-Evaluation  
**10%**

**Presentation: 40%**

(What you appear to know about what you are presenting)

Peer Evaluation  
**10%**

Teacher Analysis  
**20%**