Wisconsin Fast Plants™
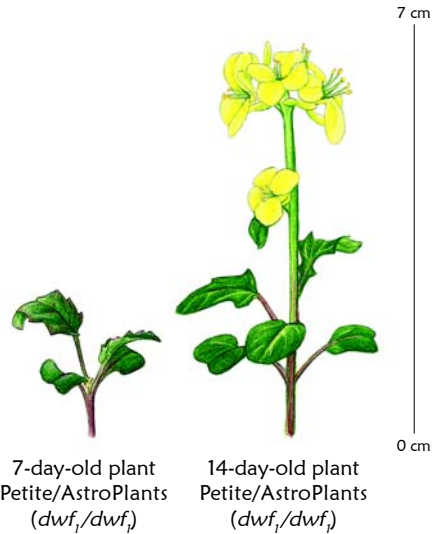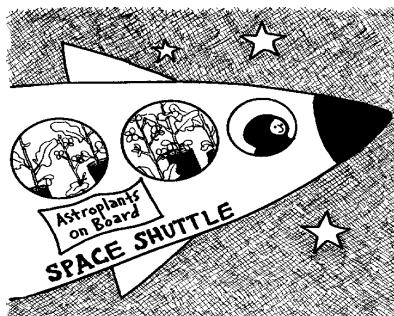*Seed Stock Profile*

Petite/AstroPlants

Single, recessive trait: dwf_1/dwf_1

Petite plants are shorter than Standard Wisconsin Fast Plants™, and all parts of the plants are reduced in size, proportional to their height. Petite plants are a more intense, green color than Standard.

The Petite stock originated from a naturally occurring mutation. The phenotype is conditioned by a single, recessive gene (dwf_1). In the homozygous, recessive condition, plants are Petite (dwf_1/dwf_1).

Did you know that Wisconsin Fast Plants™ have flown on seven Space Shuttle flights, and stayed at the Russian Space Station Mir twice?

The Petite stock has been used as the basis for developing other stocks, including *AstroPlants,* a stock used by NASA Space Shuttle experiments. AstroPlants were selected to meet NASA's "5-10-15" specifications: plants that produced 5 seed pods, grew no taller than 10 cm, and flowered in 15 days.

7 cm

0 cm

7-day-old plant
Petite/AstroPlants
(dwf_1/dwf_1)

14-day-old plant
Petite/AstroPlants
(dwf_1/dwf_1)

Growing Tips

- 24-hour fluorescent light, water, and fertilizer are essential for Wisconsin Fast Plants™. Refer to *Growing Instructions* for more details.
- The petite size permits dense planting and accommodates transportation of plants. Great for limited class size or travel!
- Petite plants are more sensitive to adverse environmental conditions than Standard plants. Sow extra seeds per pot; 7 days later, remove all but one plant per pot.
- Prior experience with growing Standard Wisconsin Fast Plants™ is useful for comparison with Petite/AstroPlants.

Length of life cycle: 35-45 days
Days to flowering: 14
Average plant height at day 14: 6.6 cm

The Population Explosion

Objective: Explore the effect of overcrowding on Petite Wisconsin Fast PlantsTM or AstroPlants.

Time Required: 14-40 days, depending on experimental design.

Procedure:

1.   Predict how the plants will respond if they are crowded together. Design an experiment to test different numbers of plants per pot.

2.   How old will the plants be when you measure them? Think about what plant response(s) you plan to measure. *Ideas: Plant height, plant color, development time (for leaves, flowers, or seed pods), seed number, or seed size. (Keep in mind that you'll have to pollinate the plants with a beestick if you plan to produce seeds.)*

3.   Plant Petite or AstroPlant seeds, following the *Growing Instructions*, but plant the number of seeds per pot according to your experimental design.

4.   Record your measurements on the appropriate days.

5.   How did the plants respond to crowding? Describe your observations.

See *www.fastplants.org* for more information about this activity (*The Population Explosion*).

CAROLINA®