

## Moving Genes

### Paper Model – Create a RoundUp Ready Soybean Plant

*Using herbicide resistance as the example, create a transgenic soybean*

1. Find the **gene of interest** (on bacterium). What does this gene do? What will happen when it is moved into the soybean plant? Use colored pencils and shade the gene sequence in red.
2. Use yellow highlighter or yellow colored pencils and find all restriction enzyme **recognition sites**. Highlight these recognition sites on both the soybean and bacterium strands of DNA.
3. Use a pencil to draw a line indicating where restriction enzyme will cut the sequence. Do this on both the soybean gene sequence and the bacterium gene sequence.
4. Cut genes apart on the line that was just drawn.
5. Lay cut outs on a sheet of plain white 8 ½ x 14 inch (legal size) paper. Match **sticky ends** so that the herbicide resistant gene is now incorporated into the soybean's genome.
6. Tape or glue cut-outs down.
7. Once you have moved the Glyphosate resistant DNA sequence from the bacterium into the soybean sequence, complete your diagram with the following:
  - a. Title
  - b. Label the diagram with the following terms:

soybean gene sequence	bacterium gene sequence
recognition sites	gene of interest
sticky ends	transgenic or genetically modified organism
  - c. Using the above terms as well as the following terms, write a paragraph describing what this paper model represents. Include this paragraph on your diagram.

recombinant DNA technology	Cut
restriction enzyme	HIND III
molecular scissors	Genetic engineering

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