

Name: \_\_\_\_\_

## DNA ANALYSIS TECHNIQUES

**Objective 1:**  
Obtain a DNA sample from the rose plant

Blank space for matching Objective 1 to a DNA analysis technique.

**Objective 3:**  
Cut the DNA into pieces

Blank space for matching Objective 3 to a DNA analysis technique.

Last winter was particularly harsh. However, a plant geneticist noticed that her roses did extraordinarily well. She wants to test her rose plants to see if they carry a gene for frost resistance. Help her determine her best course of action.

**Directions:**  
In each box, match the DNA Analysis technique that should be used to meet the objective or goal.

**Did You Know?**  
*Restriction enzymes are found naturally in bacteria and are used to destroy foreign DNA such as from a virus. They help protect the bacteria!*

**Objective 2:**  
Make a DNA sample large enough to work with.

Blank space for matching Objective 2 to a DNA analysis technique.

**Objective 4:**  
Separate DNA pieces from largest to smallest

Blank space for matching Objective 4 to a DNA analysis technique.

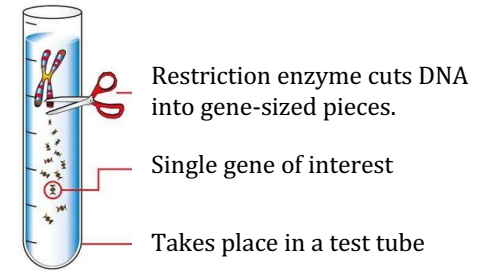
### What Now?

The plant geneticist was successful. She determined that her rose plants do carry the gene for frost resistance. Now she wants to grow a food crop that also has this gene to allow them to be grown in climates with shorter growing seasons. What should she do next?

Blank space for answering the "What Now?" question.

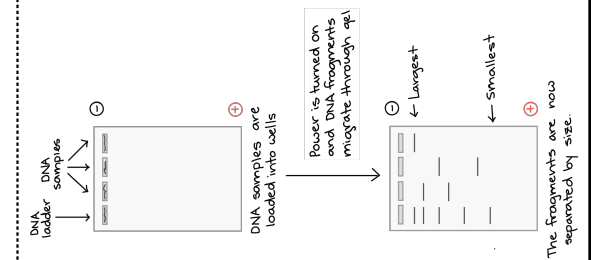
## Restriction Digest

To cut DNA



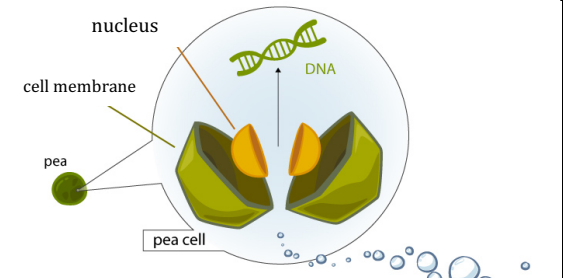
## Gel Electrophoresis

To separate pieces of DNA by size



## DNA Extraction

To get DNA out of a cell



## PCR

To cut make copies of DNA

