Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Plant Propagation

Environmental Factors of Seed Germination Lab

In this lab experiment you will be attempting to germinate seeds in various environmental situations. You will be able to identify ideal conditions for seed germination and growth and identify the recognizable symptoms of poor seed germinating conditions.

**Directions:**

1. Split into groups as directed by your instructor
2. Plant 1 flat of seeds precisely following the instructions given below
3. Label your flat with the treatment number and the treatment (Example: #1: Normal Temperature)
4. Observe each treatment every day and fill out the observation table. Watch carefully for signs of seed germination and plant health.

**Temperature Effects on Germination**

**#1 Normal Temperature**

This seed flat will be placed in the greenhouse at normal growing temperatures

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

**#2 Bottom Heat**

This seed flat will be placed in the greenhouse on a heated greenhouse bench

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

**#3 Cold**

This seed flat will be placed in the cooler

|  |  |  |
| --- | --- | --- |
| **Number of seeds planted** | **# of days til germination**(first day seedling breaks through soil surface) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |

**#4 Excessive Heat**

This seed flat will be placed in an excessively warm area

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |



**Moisture Effects on Germination and Seedling Growth**

 **#5 No Moisture**

This flat will be never be watered

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

 **#6 Regular Moisture**

This flat will be watered as recommended

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

 **Flat # 7 Over-watering**

This flat will be over watered

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

****

**Light Effects on Germination and Seedling Growth**

 #**8 Normal Production Light**

This flat will be placed in the greenhouse with normal outdoor light

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

 **Flat #9 Normal Indoor Light**

 This flat will be placed in the classroom with normal indoor light

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

**Flat #10 Dark-No Light**

This flat will be placed with no light

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |



**Effects of Planting Depth on Germination**

 **Flat #11 Normal Planting Depth**

Seeds will be planted at recommended planting depths

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

**Flat #12 in Bottom of Pot**

Place all seeds at the bottom of each pot

|  |  |  |  |
| --- | --- | --- | --- |
| **Number of seeds planted** | **# of days til germination** | **Germination Rate**(% of seeds germinated) | **Observation of seedling health:** Record information such as abnormal color, stem strength or weakness, legginess, height, etc |
|  |  |  |  |

**Summary:** Write a 3 paragraph essay about the results of the experiment