# Pre-Lab Information

**Purpose** To examine the effects of humidity, air temperature, and air pressure on weather

**Time** Approximately 60 minutes

**Question** How do atmospheric conditions influence weather patterns?

**Summary** In this lab activity, you will use a virtual model to determine the combinations of relative humidity, air temperature, and air pressure that create different weather phenomena and patterns.

# Lab Procedure

1. **Prepare for the lab.**
2. Read through this guide before you begin, so you know the expectations for this lab.
3. If anything is not clear to you, be sure to ask your teacher for assistance.

|  |  |  |
| --- | --- | --- |
|  |  |  |

1. **Open the virtual lab.**
2. **Create snow.**
   1. Read the introduction to the virtual lab. Press the “**?**” buttons to learn about relative humidity, air temperature, and air pressure.
   2. Press the “**Start the lab**” button to proceed.
   3. Read about how snow forms. Press the “**?**” button to go back to this information at any point in this part of the activity. Press the “**Create snow!**” button to proceed.
   4. Use what you know and have learned to choose the descriptions of relative humidity, air temperature, and air pressure that would create snow.
   5. Press the “**Check**” button.
      * + 1. If your descriptions are correct, snow will appear in the model. Proceed to Step F.
          2. If your descriptions are incorrect, a different weather phenomenon will appear. Close the feedback bubble by pressing the “**x**” button. Do Steps D and E until you get the right combination. Proceed to Step F.
   6. Record the combination that forms snow in the table in the **Data** section of this guide.
   7. Move on to the next step.
3. **Create rain.**
   1. Read about how rain forms. Press the “**?**” button to go back to this information at any point in this part of the activity. Press the “**Create rain!**” button to proceed.
   2. Choose the descriptions of relative humidity, air temperature, and air pressure that would create rain.
   3. Press the “**Check**” button.
      * + 1. If your descriptions are correct, rain will appear in the model. Proceed to Step D.
          2. If your descriptions are incorrect, a different weather phenomenon will appear. Close the feedback bubble by pressing the “**x**” button. Do Steps B and C until you get the right combination. Proceed to Step D.
   4. Record the combination that forms rain in the table in the **Data** section of this guide.
   5. Move on to the next step.
4. **Create a thunderstorm.**
   1. Read about how a thunderstorm forms. Press the “**?**” button to go back to this information at any point in this part of the activity. Press the “**Create a thunderstorm!**” button to proceed.
   2. Choose the descriptions of relative humidity, air temperature, and air pressure that would create a thunderstorm.
   3. Press the “**Check**” button.
      * + 1. If your descriptions are correct, a thunderstorm will appear in the model. Proceed to Step D.
          2. If your descriptions are incorrect, a different weather phenomenon will appear. Close the feedback bubble by pressing the “**x**” button. Do Steps B and C until you get the right combination. Proceed to Step D.
   4. Record the combination that forms a thunderstorm in the table in the **Data** section of this guide.
   5. Move on to the next step.
5. **Create fog.** 
   1. Read about how fog forms. Press the “**?**” button to go back to this information at any point in this part of the activity. Press the “**Create Fog!**” button to proceed.
   2. Choose the descriptions of relative humidity, air temperature, and air pressure that would create fog.
   3. Press the “**Check**” button.
      * + 1. If your descriptions are correct, fog will appear in the model. Proceed to Step D.
          2. If your descriptions are incorrect, a different weather phenomenon will appear. Close the feedback bubble by pressing the “**x**” button. Do Steps B and C until you get the right combination. Proceed to Step D.
   4. Record the combination that forms fog in the table in the **Data** section of this guide.
   5. Move on to the next step.
6. **Create clear skies.**
   1. Read about how clear skies form. Press the “**?**” button to go back to this information at any point in this part of the activity. Press the “**Create clear skies!**” button to proceed.
   2. Choose the descriptions of relative humidity, air temperature, and air pressure that would create clear skies.
   3. Press the “**Check**” button.
      * + 1. If your descriptions are correct, clear skies will appear in the model. Proceed to Step D.
          2. If your descriptions are incorrect, a different weather phenomenon will appear. Close the feedback bubble by pressing the “**x**” button. Do Steps B and C until you get the right combination. Proceed to Step D.
   4. Record the combination that forms clear skies in the table in the **Data** section of this guide.
   5. When you have completed all parts of the virtual lab, move on to the next activity in the Virtual Classroom.

# Data

Record your observations and data either in your lab notebook or in the space below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Weather Phenomenon/ Pattern** | **Factors** | | |
| **Relative Humidity** | **Air Temperature** | **Air Pressure** |
| Snow |  |  |  |
| Rain |  |  |  |
| Thunderstorm |  |  |  |
| Fog |  |  |  |
| Clear skies |  |  |  |