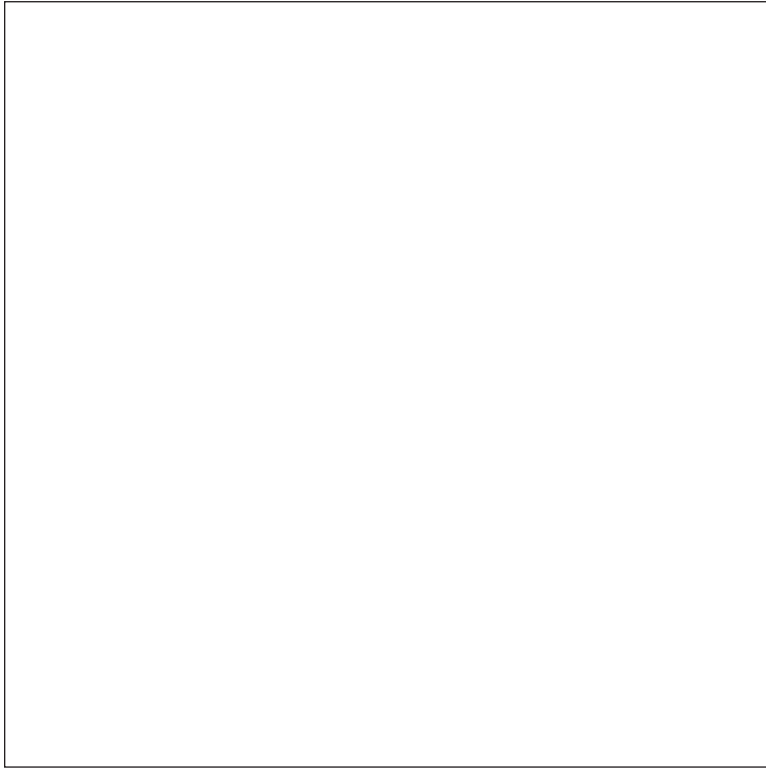
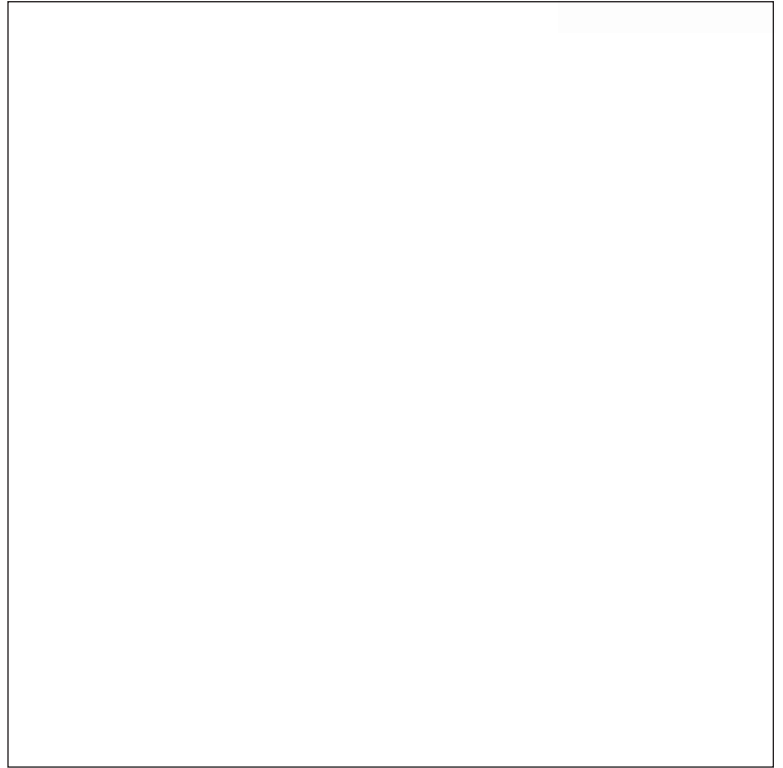


Name: \_\_\_\_\_

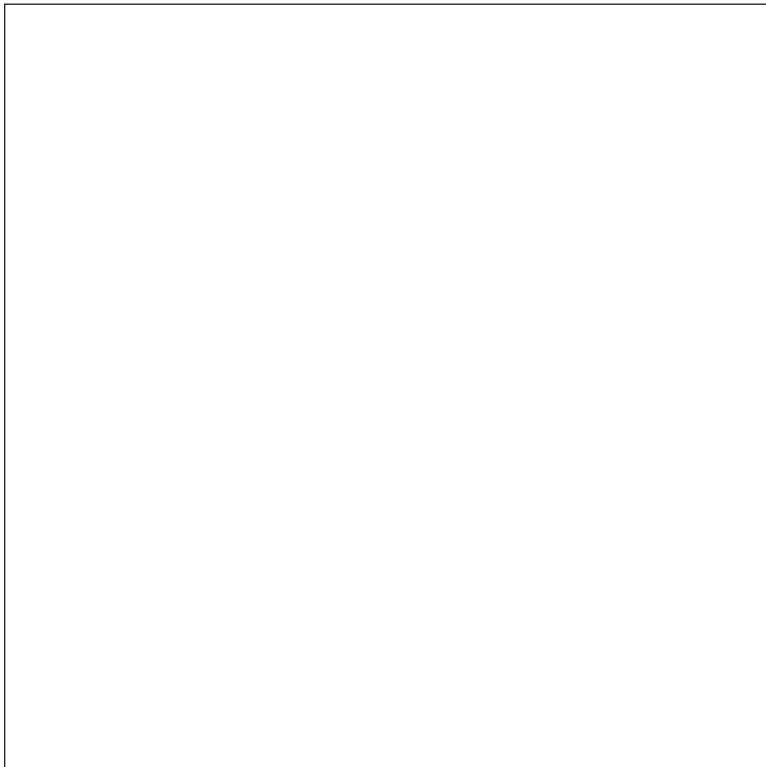
Sketch the four stages of thunderstorm development in the boxes below. This is not an art project, but give it a decent effort. For each cloud sketch, include the arrows showing the direction of the air movement going on - both in the cloud and near the ground (include both updrafts and downdrafts). **Illustrate any processes going on inside the cloud.**



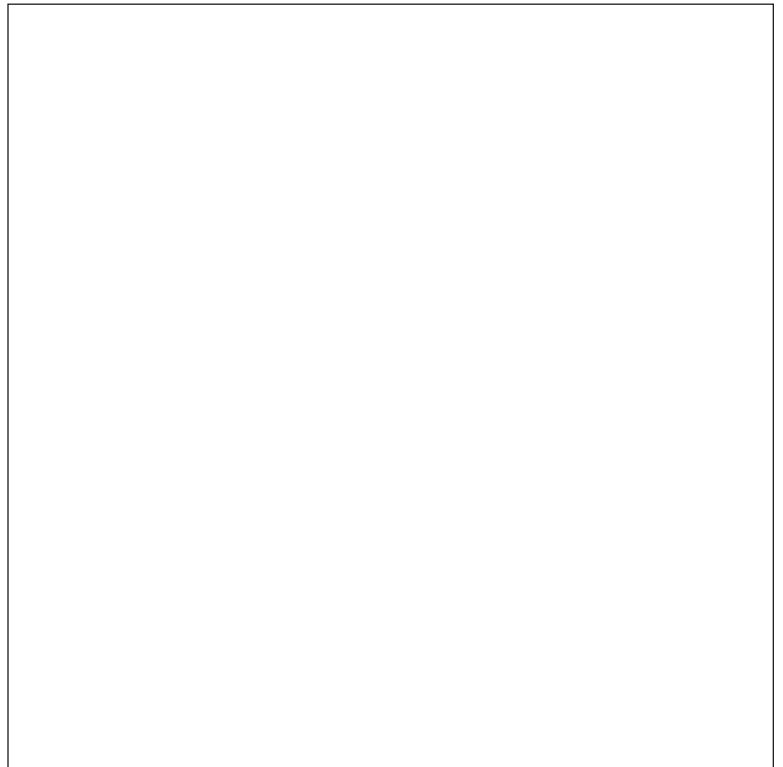
Cumulus mediocris



Cumulus congestus (prior to ice formation)



Cumulonimbus calvus



Cumulonimbus incus

Questions:

1. In the morning, you see some cumulus humilus. A few hours later (around noon), you still see cumulus humilus, with a few cumulus mediocris here and there. Later that afternoon, you look again and the sky is still littered with cumulus humilus and mediocris. Although the clouds are clearly moving around and changing shape, they really don't look any different than they did this morning. What can you conclude from this observation?
  - A. The air is mostly Stable / Unstable (pick one)
  - B. Thunderstorms are Likely / Unlikely (pick one)
  
2. In the morning, you see some cumulus humilus. A few hours later (around noon) you see a lot of cumulus congestus and some cumulus castellanus. What can you conclude from this observations?
  - A. The air is mostly Stable / Unstable (pick one)
  - B. Thunderstorms are Likely / Unlikely (pick one)
  
3. You are watching the local news and the weather reporter says that "Unstable air is moving into New Mexico for the next few days." What kind of weather do you expect in the next few days?
  - A. Clear skies.
  - B. Maybe some scattered cumulus but nothing else.
  - C. Cumulonimbus clouds.
  - D. Very polluted air near the ground.
  
4. You are watching the weather channel and they report that a large temperature inversion is growing over New Mexico this week. What kind of weather do you expect in the next few days?
  - A. Cumulus congestus and possibly some cumulonimbus.
  - B. Cloudless skies but air pollution near the ground.
  - C. Extremely clean and clear air.
  - D. Days of nearly non-stop rain.
  
5. You see large cloud anvils in the distance in the direction of Santa Fe / Los Alamos. What do you know from this observation?
  - A. The air is very stable.
  - B. It is very unlikely today that we will see any cumulus congestus forming around Albuquerque.
  - C. Air pollution is going to be a problem.
  - D. We have unstable air.
  - E. The tropopause is unusually low today.
  
6. You are at home during a spring afternoon. Suddenly there is a tremendous blast of air that seems to have come out of nowhere. The air suddenly gets colder. You look up but see no cloud above you.
  - A. What is the most likely explanation for this event? (what is it called?) \_\_\_\_\_
  - B. Describe briefly in a few sentences what is causing this. Add a sketch to illustrate your answer.