Guiding Questions for Cell Expert Groups:

#1: Human Blood (Normal) Cells Slide

1) Human RED blood cells are among the smallest in the human body. They also are a eukaryotic cell that does not have nucleus. What is the significance of these cells being so tiny?

2) Why is there no nucleus present in MATURE human red blood cells?

3) Human blood does not just contain red blood cells. There are a variety of immune cells or leukocytes (white blood cells). What do you notice about how many white blood cells are present versus number of red blood cells? What are the functions of the white blood cells?

Guiding Questions for Cell Expert Groups:

#2: Human Blood (Sickle Cell Anemia)

1) Sickle cell anemia can be a deadly disease. How do the red blood cells change and why is this change potentially deadly? (include "polymerization" in your answer)

2) How does one acquire sickle cell anemia? What part of the cell's anatomy is changed that would lead to this disease?

3) Why is "carrying" the sickle cell trait a possible ADVANTAGE in some parts of the world?

Guiding Questions for Cell Expert Groups:

3: Onion Epidermis (skin cells)

1) How is this particular plant cell different from what you would see in most plant cells? (Hint: think about some of the differences between plant and animal cells)
What major biomolecule could be found in abundance within these cells (think plant energy storage)

2) Describe the organization of the cells seen: Why are they organized this way? (Again think about plant vs. animal cell differences) What specific plant biomolecule could be found in this cell's structure? (Think Beta Bonds…..)

Guiding Questions for Cell Expert Groups:

#4: Striated Muscle

1) This cell shows the most common type of muscle in the human body. Notice the stripes seen on the cells. What are the importance of them? How does this help with function?

2) The cells seen under the microscope don't show many of their organelles. If we were able to see organelles, there would be one specific organelle that is much more abundant in this type of cell than most body cells. What is this organelle and why is it needed in this type of cell? (Hint: think phosphate functional group….times three)

Guiding Questions for Cell Expert Groups:

#5: Onion Root Tip

1) Note that there are dark stringy structures in the center of each cell. What are these structures and what's their role within the cell?

2) Note that there is a wide variety of organization of the stringy material in the cells (different shape, size, placement in cells, etc.). Why are these mostly concentrated at the very tip of the root AND what make each of them different?

Guiding Questions for Cell Expert Groups:

#6: Squamous Epithelial Cells (Cheek Cells)

1) What does squamous mean? What is epithelial tissue?

2) Note that the shape of these cells are scaly and flat. Why is this important for this type of tissue? Where in the body can this tissue be found? What is the lifespan of these cells compared to other body cells?

Guiding Questions for Cell Expert Groups:

#7: Frog Blood Cells

1) Frog blood is significantly different from human blood (you may have to research what human blood looks like). Due to the fact that cells are specially designed for their function, why are frog blood cells different from human blood cells?

2) How are frog blood cells similar to human red blood cells (in function)? Include a specific *protein* in your answer…