Activity Overview:

Through this activity, students will be able to understand how Chimeric Antigen Receptor T-cell (CAR-T) therapy works. The aim of the activity is to show the students that CAR-T therapy is a very specific type of treatment used in hospitals. Unlike chemotherapy, CAR-T is a more target-oriented type of cancer treatment. Students will learn about the process in which T cells are removed from patients, modified in a specialized lab to recognize cancer cells, grown in large numbers and reinfused back into the patients.

For Teachers:

CAR-T Therapy Activity Sheet

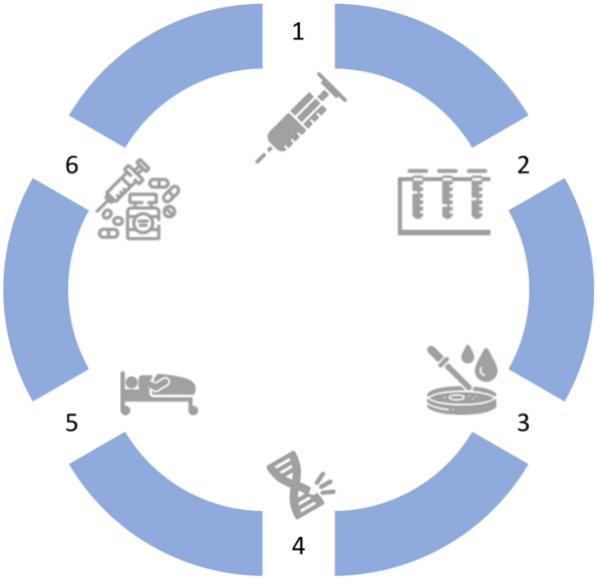
Answer:
* Answers may vary but must make sense and contain the words given.

1. Blood sample is collected from the patient.
2. Leukocyte cells are separated from the rest of the blood sample.
3. Special treatment is added to activate T cells and are grown in the laboratory.
4. CRISPR Cas9 system is used to introduce specifically engineered chimeric antigen receptors to the cells.
5. Treated cells are infused back into the patient.
6. CAR T cells show more specific binding to cancer cells and kill them.

For Students:

CAR-T Therapy Activity Sheet

Below is a diagram of the steps involved in Chimeric Antigen Receptor T-cell (CAR-T) therapy:



Use the words in the box to describe each step in CAR-T therapy:

- The words can be used as many times needed.
- All words must be used.

Blood	Cancer cells	Chimeric antigen receptors		CRISPR Cas9
Infused	Kill	Laboratory	Leukocyte	Patient
	Sample Treatment		Specific binding	

1. _____
   _____
2. _____
   _____
3. _____
   _____

4. _____
_____

5. _____
_____

6. _____
_____