Station 1: KWL Chart on the Atom
On a Post-It write down 2-3 things you learned from our unit on chemistry. Write your name on the back.

Station 2: “The Bombing Of Hiroshima”
Video: http://www.5min.com/Video/The-Atomic-Bombings-of-Hiroshima-119994298

1. What was the name of the research project to develop the nuclear bomb in the USA?
   manhattan project

2. What were the United States reasons for bombing Hiroshima, Japan?
   it was large, important armies, and hills that surround the explosion, the city didn't explode
   because

3. Many disagreed with the bombing and considered it amoral. What did Japan, President Eisenhower and Professor Peter Kuznick think about this issue?
   it happened
   warn Russia
   Japan was already defeated and they should have avoided it.

Station 3: Chernobyl
1) Staple Article to Worksheet
2) Read Article on the Chernobyl Nuclear Plant Accident.
3) As you read highlight
   a. Interesting Things in Blue
   b. Confusing things in Yellow
4) When you complete the reading summarize
   a. Summarize one interesting. (Re-write it on a blue post-it)
   b. Summarized one confusing thing (Re-write on a yellow post-it)

5) Write your name on the post-its!
Station 4: Three Mile Island
Read "Three Mile Island" out loud in your group and examine the pictures at the station.

1) What do you notice about the two maps? List your observations

The fallout don't look the same.

Why? Be more specific.

2) What do you find interesting about the other pictures?

The flower makes me think of a "special" flower. I want it.

Station 5: Earthquake in Japan - Nuclear Power Plant Accident
Read through emails between Karen and Hiroe. Karen is a friend of my mother and Hiroe is her pen pal from Japan.

1) How was the radiation affecting the environment around Hiroe's Home?

8 times more radioactive

People were urged to leave.

Whatever.

2) What are some technological problems the City is having after the earthquake?

[The electricity goes out & trains stop working]

3) The emails from Hiroe were sent over the course of almost 2 years. What do you notice about the effects of the radiation over time?

It still kept going, it was barely lessened.

The radiation affected everything in its radius.
Station 1: “The Bombing Of Hiroshima”
Video: http://www.5min.com/Video/The-Atomic-Bombings-of-Hiroshima-119994298

1. What was the name of the research project to develop the nuclear bomb in the USA?

Manhattan Project

2. What were the United States reasons for bombing Hiroshima, Japan?

They wanted the bomb to have the biggest effect possible, to end WW2, and as a response to Pearl Harbor.

3. Many disagreed with the bombing and considered it amoral. What did Japan, President Eisenhower and Professor Peter Kuznick think about this issue?

They thought it was a crime against humanity and it wasn't necessary because they thought Japan was already defeated.

Station 2: Chernobyl

1) Staple Article to Worksheet
2) Read Article on the Chernobyl Nuclear Plant Accident.
3) As you read highlight
   a. Interesting Things in Blue
   b. Confusing things in Yellow
4) When you complete the reading summarize
   a. Summarize one interesting.
   b. Summarized one confusing thing

5) Write your one interesting thing on the poster!
Station 3: Three Mile Island
Examine the pictures at the station.

1) Read “Three Mile Island” Outloud in your group
2) What do you notice about the two maps? List your observations
   One is real looking and one is a drawing. the real one makes it look more serious.
3) Why do you think the flowers have mutated?
   This is probably from the radiation and how it was exposed to it.

Station 4: Earthquake in Japan – Nuclear Power Plant Accident
Read through emails between Karen and Hiroe. Karen is a friend of my mother and Hiroe is her pen pal from Japan.

1) How was the radiation effecting the environment around Hiroe’s Home?
   It was making it very unsafe and there was no safe food.
   Also, it was so dangerous that they couldn’t go outside.

2) What are some technological problems the City is having after the earthquake?
   They don’t have electricity, and nothing is working. What else be specific?

3) The emails from Hiroe were sent over the course of almost 2 years. What do you notice about the effects of the radiation over time?
   That they don’t get that much better and it takes a long time to even see a little improvement.
Station 1: “The Bombing Of Hiroshima”
Video: http://www.5min.com/Video/The-Atomic-Bombings-of-Hiroshima-119994298

1. What was the name of the research project to develop the nuclear bomb in the USA?

   Manhattan Project

2. What were the United States reasons for bombing Hiroshima, Japan?

   End the 6-year World War.

3. Many disagreed with the bombing and considered it immoral. What did Japan, President Eisenhower and Professor Peter Kuznick think about this issue?

   Eisenhower was sorry for what America had done, and felt that Japan was already defeated. Kuznick also disagreed with it. Japan was devastated.

Station 2: Chernobyl

1) Staple Article to Worksheet
2) Read Article on the Chernobyl Nuclear Plant Accident.
3) As you read highlight
   a. Interesting Things in Blue
   b. Confusing things in Yellow
4) When you complete the reading summarize
   a. Summarize one interesting.
      How much the radiation spread over Europe is pretty interesting. In Finland, radiation was 6X higher than normal, 5X in Denmark, and 50% higher in Norway.
   b. Summarized one confusing thing
      The article doesn't mention Poland, which...? Finish your sentences!

5) Write your one interesting thing on the poster!
Station 3: Three Mile Island
Examine the pictures at the station.

1) Read “Three Mile Island” Outloud in your group
2) What do you notice about the two maps? List your observations
   * Cancer rates were higher where there was more radiation
   * Distribution was uneven

3) Why do you think the flowers have mutated?
   * For the same reason cancer rates were higher... Radiation probably influenced cell growth.

Station 4: Earthquake in Japan – Nuclear Power Plant Accident
Read through emails between Karen and Hiroe. Karen is a friend of my mother and Hiroe is her pen pal from Japan.

1) How was the radiation effecting the environment around Hiroe’s Home?
   * Japan was very dark
   * Can’t go outside
   * Food/water mean nothing
   * No electricity?

2) What are some technological problems the City is having after the earthquake?

3) The emails from Hiroe were sent over the course of almost 2 years. What do you notice about the effects of the radiation over time?
   * Things pretty much settled down, but the fish and other living things are still suffering.
Nuclear Chemistry Event Jigsaw  Name Patrick Shea

Station 1: “The Bombing Of Hiroshima”
Video: http://www.5min.com/Video/The-Atomic-Bombings-of-Hiroshima-119994298

1. What was the name of the research project to develop the nuclear bomb in the USA?

   The Manhattan Project

2. What were the United States reasons for bombing Hiroshima, Japan?

   Hiroshima was large, surrounded by hills, had military bases, and no prisoner of war camps. Japan was the U.S.'s enemy in WWII, and it is possible that they also wanted to frighten the Soviet Union.

3. Many disagreed with the bombing and considered it immoral. What did Japan, President Eisenhower and Professor Peter Kuznick think about this issue?

   Eisenhower said it was unnecessary and immoral. Kuznick saw it as terrible because he viewed it as a crime against humanity.

Station 2: Chernobyl

1) Staple Article to Worksheet
2) Read Article on the Chernobyl Nuclear Plant Accident.
3) As you read highlight
   a. Interesting Things in Blue
   b. Confusing things in Yellow
4) When you complete the reading summarize
   a. Summarize one interesting.
      The Soviet govt. did not immediately notify other countries that there was an accident at a nuclear plant.

   b. Summarized one confusing thing
      Why don't they mention radiation spreading to Poland? They only talk about the effect on Scandinavian countries. It's one of the 1st articles about it, they may not have known yet?

5) Write your one interesting thing on the poster!
Station 3: Three Mile Island
Examine the pictures at the station.

1) Read “Three Mile Island” Outloud in your group
2) What do you notice about the two maps? List your observations

Cancer rates were higher close to the plant, but were concentrated on one side of the river.

3) Why do you think the flowers have mutated?

There must be an association between radiation and abnormal growth.

Station 4: Earthquake in Japan – Nuclear Power Plant Accident
Read through emails between Karen and Hiroe. Karen is a friend of my mother and Hiroe is her pen pal from Japan.

1) How was the radiation effecting the environment around Hiroe’s Home?

They can’t be outside too much, because radiation in the air and rain is dangerous, electricity is out, food is spoiled, water is unsafe to drink.

2) What are some technological problems the City is having after the earthquake?

Electronic things like traffic lights didn’t work.

3) The emails from Hiroe were sent over the course of almost 2 years. What do you notice about the effects of the radiation over time?

They improve but things such as the fish industry suffer because they were still unsafe to eat.
Station 1: “The Bombing Of Hiroshima”
Video: http://www.5min.com/Video/The-Atomic-Bombings-of-Hiroshima-119994298

1. What was the name of the research project to develop the nuclear bomb in the USA?
   The Manhattan Project

2. What were the United States reasons for bombing Hiroshima, Japan?
   - Large (235,000 people)
   - Surrounded by hills
   - Important army base

3. Many disagreed with the bombing and considered it immoral. What did Japan, President Eisenhower and Professor Peter Kuznick think about this issue? Eisenhower thought it was unnecessary, Kuznick thought it was a crime against humanity, Japan was just in shock.

Station 2: Chernobyl

1) Staple Article to Worksheet
2) Read Article on the Chernobyl Nuclear Plant Accident.
3) As you read highlight
   a. Interesting Things in Blue
   b. Confusing things in Yellow
4) When you complete the reading summarize
   a. Summarize one interesting:
   Finland, Denmark, & Norway are more than 100 miles away from Chernobyl but still experienced high levels of radiation
   b. Summarized one confusing thing
   Why didn’t Tass want international regulations? Wouldn’t that be helpful?

5) Write your one interesting thing on the poster!
Station 3: Three Mile Island
Examine the pictures at the station.

1) Read “Three Mile Island” Outloud in your group
2) What do you notice about the two maps? List your observations
   - Places hit by radiation are all near the river
   - Radiation was only close to the site

3) Why do you think the flowers have mutated?
   Due to the radiation that the river was infected with

Station 4: Earthquake in Japan – Nuclear Power Plant Accident
Read through emails between Karen and Hiroe. Karen is a friend of my mother and Hiroe is her pen pal from Japan.

1) How was the radiation effecting the environment around Hiroe’s Home?
   They could eat vegetables or fish, since all those things came from the North & the North was infected. Leaves couldn’t be touched, including tea

2) What are some technological problems the City is having after the earthquake?
   Tokyo became dark, because the atomic power is no longer available

3) The emails from Hiroe were sent over the course of almost 2 years. What do you notice about the effects of the radiation over time?
   It slowly gets worse and infects more things. Tea was fine at first, but then it got infected.