Class 6

**Beginnings of the Space Race and Cold War**

Columbia Shuttle Accident

- February 2, 2003
- Second shuttle lost
- Investigation Board set up by President to uncover causes

Shuttle debris

Public reaction

Board Findings

- Management and organizational problems at NASA
- Political indecision
- Lack of investment
- http://www.caib.us/default.asp

World War II

- September 1, 1939, Germany invades Poland
- December 7, 1941, Japanese attack Pearl Harbor
- United Nations, formed, 1943-44
- April 12, 1945, Roosevelt dies, replaced by Truman
- May 8, 1945, Germany surrenders
- August 14, 1945, Japan surrenders
- Truman replaces New Deal with Fair Deal

Beginning of the Cold War

- August 1, 1946, Atomic Energy Act
- July 26, 1947, Defense act
- 1947 Marshall Plan (European Recovery Program)
- late 1947, Russia seizes control in Czechoslovakia
- April 1948, blockade of Berlin, Berlin airlift
- 1949, two major events
  - April, Russians explode an atomic bomb
  - China falls to Mao Tse-tung and communists
- April 1949, NATO formed

Transition to the 1950s

- late 1940s, New/Fair Deal questioned
- 1949, 11 communists convicted of anti-American

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- Alger Hiss convicted of being a communist agent
- June 26, 1950, North Korean Communists invaded South Korea
- 1951, Rosenbergs tried and executive (1953) for passing bomb secrets to Russians in 1944-45
- 1950-1954, House Un-American Activities Committee
- 1954 McCarthy censured by the Senate for his excesses

Korean War

- a UN Police keeping action
- quickly pushed passed the crucial 38th parallel, into North Korean territory, under Douglas MacArthur
- December, 1950, Chinese had entered, push UN troops below the 38th parallel
- April 1951, MacArthur removed
- End of "war," June 27, 1953
- November 1, 1952, US exploded the hydrogen bomb

Eisenhower Years, 1952-1960

- brought Korean War to an end
- forms Department of Health, Education, and Welfare
- strong believer in state control and small business
- favored arms control and arms reduction
- heart attack in 1955, recovered and went on to run again
- 1957, Suez crisis (beginning of Middle East problems), Nassar took over the control of the canal
- 1958 and 59, Alaska and Hawaii admitted to the union

Civil rights

- 1954-55, boycotts and marches begin
- May 17, 1954, Brown vs. Topeka
- Nov, 1956, Supreme Court throws out segregation laws
- Sept 7, 1957, first major Civil Rights Act since Civil War
- a few weeks later, confrontation in Little Rock

**Models for scientific and technological development**

A. scientific idea leads to unintended applications and consequences

B. technological need spurs the growth of science

C. basic/applied research

**<u>History of Rocketry through early 1950s</u>**

A. early history

- U.S., 1919, Robert Goddard published work on rocketry
- 1926, American Interplanetary Society
- 1933 British Interplanetary Society
- by early 1930s, Russia the only country where major support is being given to rocketry

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B. Germany moves rockets into the military theatre during WWII
- 1929, Ordnance Ballistic Section, assigned to build rocket the will have longer range than artillery (which could shoot 65 miles)
- 1942, Germans launch their first V-1 (Vergeltungswaffe)
- 1942, also testing A-4 (V-2)
-German rocket program split in two places
  - Peenemunde, on the Baltic (R&D)
  - Harz Mountains, assembled, turned out 900/months at the end of the war
- at the end of the War, most of this technology came to the U.S.
  - van Braun: "We despise the French; we are mortally afraid of the Soviets, we do not believe the British can afford us; so that leaves the Americans."

C. Russia, which developed more slowly to WWII, flourishes after
- poured major resources into R&D after the war
- 1949, had a range of 500 miles
- 1953, explode their first H bomb
- 1954, well on the way to an ICBM
- 1957, launched Sputnik

**US missile policy**

- immediately after the war, there is significant infighting over control and organization in the military
- 1947 (July 25), military reform act is passed
- 1947-48, budget cuts result in cutbacks on missile programs
- von Braun working at White Sands and Red Stone (Huntsville)

**Russian program grows, US program slows down**
- AF and Army had different ideas
  - Army, had the biggest launch vehicles
  - AF proposed a series of light, flight vehicles
- Eisenhower administration not convinced that government should pursue a rocket program
- there were those who saw this as a chance to undermine Eisenhower

**NASA**
- 1915, government had organized the National Advisory Council of Aeronautics
- Eisenhower and James Killian (pres sci advisory and pres of MIT) agree to recast as space agency
- April 2, 1958, NACA becomes NASA (National Aeronautics and Space Agency/ later Administration
- late 1958, NASA in business and coordinating our space program

<u>Close of the 1950s, situation</u>
- Sputnik I (October 4, 1957)
- Sputnik II (November 3, 1957

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- Vanguard TV-3 (December 4, 1957)
- January 31, 1958, Jupiter-C launches Explorer 1 satellite
  - von Braun's army team supplies the launch vehicle
  - brought back first major discovery, van Allen belts

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