

## Engineering Package

### Writing Ideas

#### Engineering 1-7, 9-10, and 15-18

Compare and contrast the suspension bridge to the cable bridge.

Research how bridges are built to withstand natural disasters (earthquakes, hurricanes, and tornadoes).

Research the different tools and machinery that are used to design and build a bridge.

Pick a particular bridge-building job and write a job description.

Research the different considerations that must be made before a bridge is built (barges to pass through, how much traffic will be using it at one time.)

#### Engineering 11

Research the history of St. Louis, what other symbols could have been designed, other than the Arch, and explain why.

Research the challenges the builders of the Arch faced. Detail three and how they overcame the challenges.

Develop five journal entries of one of the workers building the Arch.

#### Engineering 8 (several ideas in Teacher Tool already)

Research the challenges the engineers had designing the Mercury Capsule 2. Focusing especially about the technology that was available at that time.

Develop five diary entries of the one of the designers as he was moving through the design process.

Develop an interview from an eye-witness account.

Develop a guide for the astronauts to describe the inside of the astronaut and some of the jobs the astronauts will complete in the capsule.

Develop a magazine ad for the 1960s that would convince the American people that the Mercury 2 and more space travel was necessary and safe.

## **Engineering 12**

Research why it was better to tear down and rebuild than to renovate the 1966 Busch Stadium for the 2006 stadium.

The 1966 Busch Stadium was designed like the coliseum in Rome. Research the building of the coliseum.

Research the different jobs that were utilized to design and build the stadium.

## **Engineering 13**

Research how the bridge was built in the 1800s in the middle of a river.

Research the difficulties with building the bridge in the 1800s (disease, death, and no safety regulations).

## **Engineering 14**

Interview an inventor to find out how to get an idea to a working product.

Research the jobs that are still needed in manufacturing.

Compare and contrast the advantages and disadvantages of robotics and automation to a human worker.

Research the jobs of data scientists and technologists in manufacturing