Team Name: _____ **Date:** _____
Engineers: _____ **and:** _____

Wheeling It In! Worksheet

Engineering Assignment Letter

Greetings engineers!

Your task today is to design and build a transportation system to move heavy materials from one place to another. The catch is that you will be traveling back in time a few thousand years! You have been hired as a **lead engineer** in ancient times to arrange the transportation of stone for a huge project — the building of an amazing pyramid!

Your time capsule is scheduled to depart in 20 minutes and your design must be completed before you leave! Please work diligently with your team partner.

When designing your system, keep in mind the advantages of the *wheel and axle*, and the *lever* — simple machines that make the transportation of materials easier. Please follow the instructions below and on the next pages of this worksheet.

Good Luck!

1. **Is your design goal to transport many smaller stone blocks, or fewer large stone blocks?**

2. **Is the speed or distance you must transport the stone blocks your primary concern? Why?**

3. **What materials are you using in your design? Why did you choose these?**

4. **How does the wheel and axle, or lever make transporting your stone blocks easier?**

5. Engineers always create a design before they start to build something. In the space below, create a detailed sketch of the design of your transportation system. Be sure to label the wheel and axle, and lever, and other important parts of your design.

Are you ready to race your transportation system? Let's find out how fast it is!

1. **What is the total distance your transportation system traveled? Show your work.**
    total distance = distance to unload point + distance back to starting point

2. **At what speed did your transportation system travel? Show your calculations.**
    speed = total distance ÷ time

3. **How much weight did your transportation system successfully transport?**

4. **How could you make your transportation system faster?**

5. **How could you make your transportation system stronger so it could carry more weight?**