Not the Basic Load - bESTology Week 4

Are you ready to become the ultimate loadmaster, stevedore or cargo handler? Oversized freight, weight restriction, bridge formula, permits and intermodal are only a few words you would use in these professions. Sit down, take a load off and let’s get started with the basics.

According to Dictionary.com, a load is defined as anything put in or on something for conveyance or transportation; freight; cargo. “Load” can also be a verb; to load, loading, loaded. Whether used as a noun or a verb, we have a LOAD of information to share.

Resources:
American Association of Railroads
Airbus A320
Norfolk Southern and Rail Transport
American Association of Port Authorities
USAF Loadmaster
Wikipedia – Types of Ships
Department of Transportation – Bridge Formula Calculator
Truck Driving video game

Brainstorm:
As a bESTologist, discuss how the following must be evaluated when transporting oversized materials on land, air and sea: power lines, strength of a road’s surface during various seasons, bridges and overpasses, exit ramps, cranes for loading and unloading, density of salt water or the center of gravity. Continue the discussion, explaining the increased power and braking mechanisms needed by trucks, ships and planes to transport oversized cargos.

Writing: [Click here to learn MORE about Airbus. Be sure to watch the VIDEO!]
Coming to America! Airbus!
In 2015, Airbus will begin building the A320 aircraft in Mobile, Alabama. With pre-assembled components originating in Europe, various regions across the U.S. and other global locations, illustrate/diagram the various modes of transportation required to get each component to the final assembly point - Mobile. Taking into consideration the size, weight and cost, summarize why Airbus has selected each segment/mode to transport each piece of cargo, e.g. wings, fuselage sections, tail assembly (vertical and horizontal) and engines. Evaluate the geographic location of Mobile and determine how the factors such as a port with ships and barges, a long landing strip at Brookley Field, an interstate system, and rail access, helped Airbus make the decision to locate this undertaking in Mobile. Chart the advantages and disadvantages of the location with reference to the transportation costs.
(Note: Airbus is a proud community partner for several BEST hubs and numerous BEST teams across America. Thank You Airbus!)
**BEST Robot:**
During Warp X (the 2002 BEST game), robots were required to transport game pieces (cargo) through a black hole (an incline and a decline - ramp). Compare how an incline/decline on a BEST field relates to the real-world, e.g. hills, bridges, ramps. Identify materials in the BEST consumable kit that could be used to manufacture components to allow your robot to perform such actions.

Reflecting back on Warp XX (the 2012 BEST game), robots had to transport cargo up and down a space elevator. Compare and contrast how this mode of transportation differs from ground transportation.

Determine how gravity played a role in both games and discuss how gravity must be taken in consideration for real-world transport.

**Community Connection:**
Collect photos of various types of trucks, planes, trains and ships/barges in your community or region and assemble a collage. Once complete, study each picture and determine -
- if the cargo is a liquid, solid or gas
- if the cargo is live (people, cattle, chickens, etc.)
- if the cargo is intermodal (requiring various types of transport before arriving at its final destination)
- if the cargo required a loadmaster or a stevedore
- if the bridge formula was required to transport the cargo (examine the axles and placement)
- if the final destination for the cargo is located in your community and who or what will be the receiver of the cargo
- if the cargo is raw material or a final product

Show your collage to your teammates and share your Top 10 Facts concerning cargo in your community.

**Bloom’s Taxonomy:** chart, collect, compare, contrast, determine, diagram, discuss, evaluate, explain, identify, illustrate, reflect, show, study, summarize, tell

**Workforce Skills:** active learning, complex problem solving, critical thinking, equipment selection, reading comprehension, speaking, systems evaluation, writing