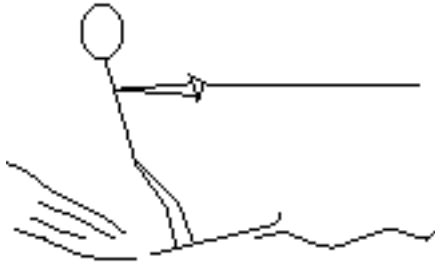


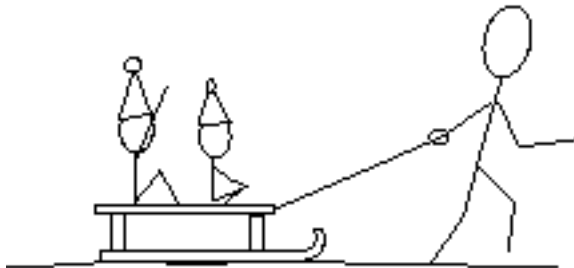
Free Particle Model Worksheet 1b: Force Diagrams and Component Forces

In each of the following situations, represent the object with a particle. Sketch all the forces acting upon the object, making the length of each vector represent the magnitude of the force. Also use congruency marks to indicate which vectors are equal in magnitude.

1. Draw a force diagram for the water-skier. Label the force vectors and use equality marks on the vectors.



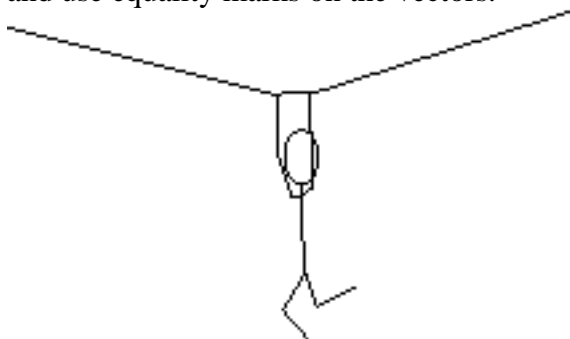
2. Draw a force diagram for the sled and kids. Note that the pull on the sled is at an angle. Label the force vectors and use equality marks on the vectors.



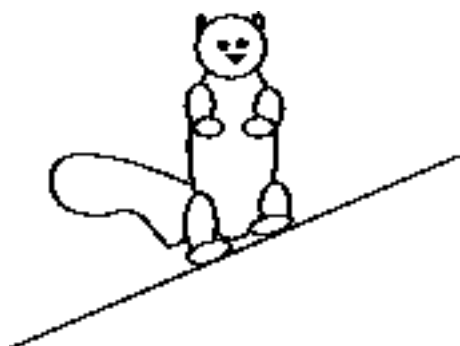
3. Draw a force diagram for the table. The dancer is leaning on the table at an angle while stretching. Label the force vectors and use equality marks on the vectors.



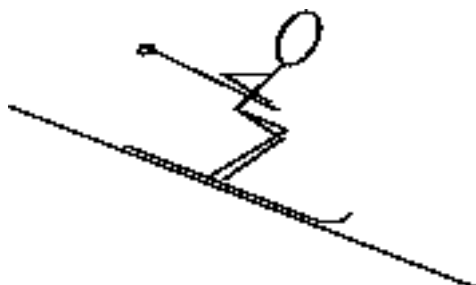
4. Draw a force diagram for the person hanging onto the rope bridge. Label the force vectors and use equality marks on the vectors.



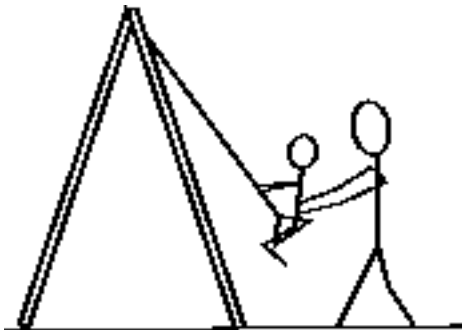
5. Draw a force diagram for a squirrel sitting still on a roof. Label the force vectors and use equality marks on the vectors.



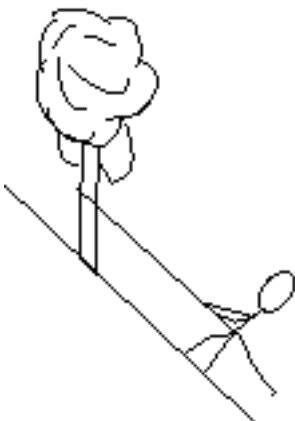
6. Draw a force diagram for the skier who slides with negligible friction. (That means you can ignore the friction force.) Label the force vectors and use equality marks on the vectors.



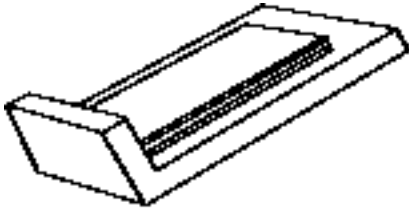
7. Draw a force diagram for the child on the swing who is being pulled back before being released. Label the force vectors and use equality marks on the vectors.



8. Draw a force diagram for the climber who has stopped to rest. Label the force vectors and use equality marks on the vectors.



9. Draw a force diagram for the magazine on a magazine rack. Label the force vectors and use equality marks on the vectors.



10. Draw a force diagram for the person:
a) when stepping off
b) when the stepping foot strikes the ground.

Label the force vectors and use equality marks on the vectors.

