

## STUDENT INSTRUCTIONS

- 1) Log in to Whyville → Go to the Teleport Menu → PlaneWorks → CAD.
- 2) Read the introduction and then click on the “more instructions” link.
- 3) Click on one of the aircraft and begin to customize it.
  - a. First, you must assemble the aircraft.
  - b. Notice the colored dots on each part. Click and drag the parts until they meet up.
  - c. Once your plane is assembled, you can begin to make custom changes to it. Change the materials, the fuel capacity, passenger capacity, and number of engines.
- 4) The CAD program will run a simulation based on your design. It will test to see if your plane design is strong enough and produces enough lift to be able to fly. Click on “Run Test Flight” to run the simulation. The simulation uses real “airplane lift” formulas to determine if the plane is flightworthy.
- 5) If your plane passed the test, you can save it. Be sure to give it a name.
- 6) Finish assembling the other plane types. Make customizations if you want to.
- 7) You can enter your planes into Olympics events by visiting that page. Events occur a few times an hour. If you win the Olympics event, you’ll gain 50 clams! Make sure to make designs that will the specific challenge.
- 8) Complete the worksheet.

Name		Date								
Whyville ID		Class Period								
1. What was this lesson about?										
2. What did you need to know to succeed?										
3. What new questions did you think of while playing through this lesson?										
<p>4. Match each plane to the task that it performs best:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Boeing 747-400</td> <td style="width: 50%;">Medium distance trips with twenty passengers.</td> </tr> <tr> <td>Cessna 560 Citation V</td> <td>Medium distance trips with 150 passengers.</td> </tr> <tr> <td>F-16 Falcon</td> <td>Long distance trips with 400 passengers.</td> </tr> <tr> <td>Boeing 737-600</td> <td>Medium distance trips with two passengers.</td> </tr> </table>			Boeing 747-400	Medium distance trips with twenty passengers.	Cessna 560 Citation V	Medium distance trips with 150 passengers.	F-16 Falcon	Long distance trips with 400 passengers.	Boeing 737-600	Medium distance trips with two passengers.
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5. What are the three parts that you can customize in the CAD game? What is each part's function?										
6. Even though the CAD game allows you to choose advanced materials, like carbon-plastic, most planes are still made from aluminum alloy? Why do you think this is so?										
7. You need to add extra passengers to the airliner you are building for a customer. What changes can you make to the airliner to make sure it flies, even though it will be heavier?										