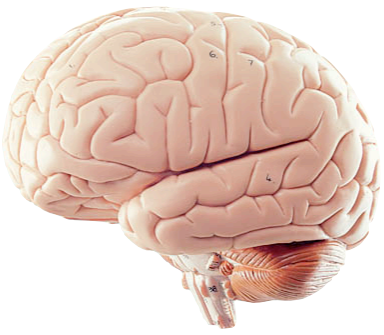
designing for **variability**

Mindy Johnson
CAST, Inc.



CAST

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universal design for learning

http://www.udlcenter.org/

I. Provide Multiple Means of Representation	II. Provide Multiple Means of Action and Expression	III. Provide Multiple Means of Engagement
1: Provide options for perception 1.1 Offer ways of customizing the display of information 1.2 Offer alternatives for auditory information 1.3 Offer alternatives for visual information	4: Provide options for physical action 4.1 Vary the methods for response and navigation 4.2 Optimize access to tools and assistive technologies	7: Provide options for recruiting interest 7.1 Optimize individual choice and autonomy 7.2 Optimize relevance, value, and authenticity 7.3 Minimize threats and distractions
2: Provide options for language, mathematical expressions, and symbols 2.1 Clarify vocabulary and symbols 2.2 Clarify syntax and structure 2.3 Support decoding of text, mathematical notation, and symbols 2.4 Promote understanding across languages 2.5 Illustrate through multiple media	5: Provide options for expression and communication 5.1 Use multiple media for communication 5.2 Use multiple tools for construction and composition 5.3 Build fluencies with graduated levels of support for practice and performance	8: Provide options for sustaining effort and persistence 8.1 Heighten salience of goals and objectives 8.2 Vary demands and resources to optimize challenge 8.3 Foster collaboration and community 8.4 Increase mastery-oriented feedback
3: Provide options for comprehension 3.1 Activate or supply background knowledge 3.2. Highlight patterns, critical features, big ideas, and relationships 3.3 Guide information processing, visualization, and manipulation 3.4 Maximize transfer and generalization	6: Provide options for executive functions 6.1 Guide appropriate goal-setting 6.2 Support planning and strategy development 6.3 Facilitate managing information and resources 6.4 Enhance capacity for monitoring progress	9: Provide options for self-regulation 9.1 Promote expectations and beliefs that optimize motivation 9.2 Facilitate personal coping skills and strategies 9.3 Develop self-assessment and reflection
Resourceful, knowledgeable learners	**Strategic, goal-directed learners**	**Purposeful, motivated learners**

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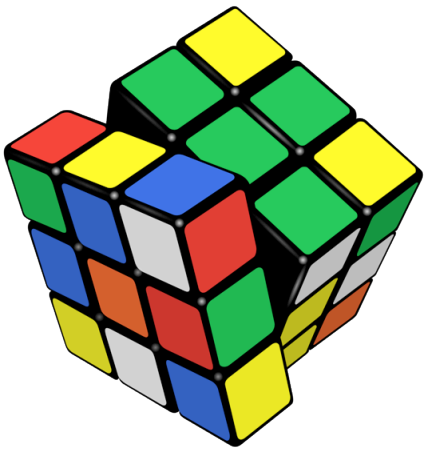
We need to attend to

variability



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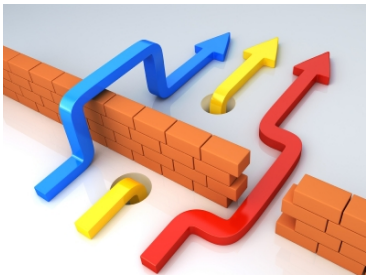
goals versus means



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new **technologies**
new **possibilities**
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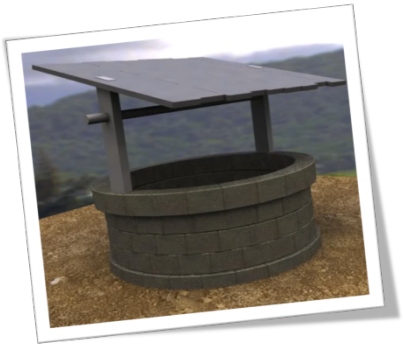

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universal design for learning

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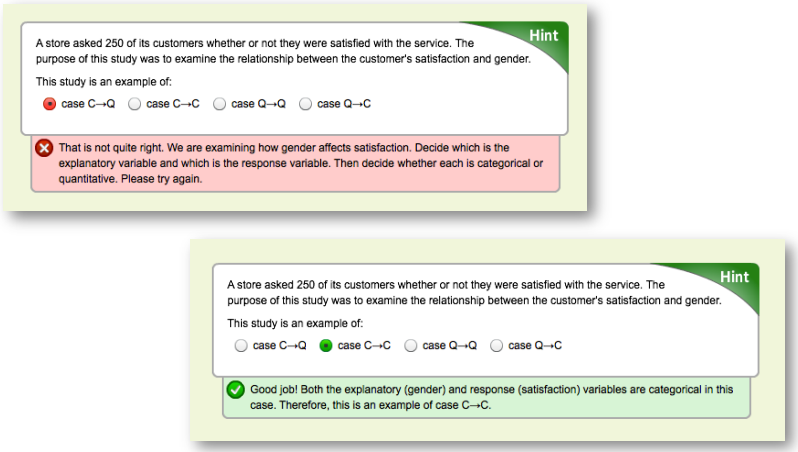
Hint
A store asked 250 of its customers whether or not they were satisfied with the service. The purpose of this study was to examine the relationship between the customer's satisfaction and gender.
This study is an example of:
case C→Q
case C→C
case Q→Q
case Q→C
That is not quite right. We are examining how gender affects satisfaction. Decide which is the explanatory variable and which is the response variable. Then decide whether each is categorical or quantitative. Please try again.
Hint
A store asked 250 of its customers whether or not they were satisfied with the service. The purpose of this study was to examine the relationship between the customer's satisfaction and gender.
This study is an example of:
case C→Q
case C→C
case Q→Q
case Q→C
Good job! Both the explanatory (gender) and response (satisfaction) variables are categorical in this case. Therefore, this is an example of case C→C.

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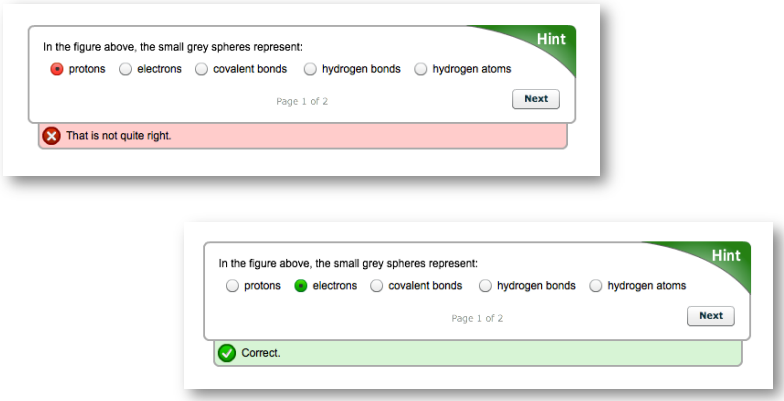
Hint
In the figure above, the small grey spheres represent:
protons
electrons
covalent bonds
hydrogen bonds
hydrogen atoms
Page 1 of 2
Next
That is not quite right.
Hint
In the figure above, the small grey spheres represent:
protons
electrons
covalent bonds
hydrogen bonds
hydrogen atoms
Page 1 of 2
Next
Correct.

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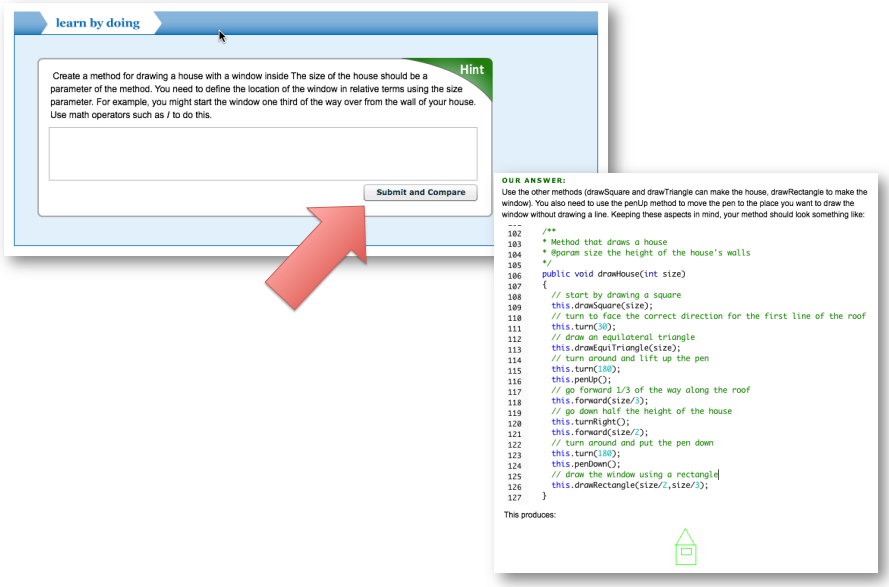
learn by doing
Hint
Create a method for drawing a house with a window inside The size of the house should be a parameter of the method. You need to define the location of the window in relative terms using the size parameter. For example, you might start the window one third of the way over from the wall of your house. Use math operators such as / to do this.
Submit and Compare
OUR ANSWER:
Use the other methods (drawSquare and drawTriangle can make the house, drawRectangle to make the window). You also need to use the penUp method to move the pen to the place you want to draw the window without drawing a line. Keeping these aspects in mind, your method should look something like:
/**
* Method that draws a house
* @param size the height of the house's walls
*/
public void drawHouse(int size)
{
// start by drawing a square
this.drawSquare(size);
// turn to face the correct direction for the first line of the roof
this.turn(30);
// draw an equilateral triangle
this.drawEquiTriangle(size);
// turn around and lift up the pen
this.turn(180);
this.penUp();
// go forward 1/3 of the way along the roof
this.forward(size/3);
// go down half the height of the house
this.turnRight();
this.forward(size/2);
// turn around and put the pen down
this.turn(180);
this.penDown();
// draw the window using a rectangle
this.drawRectangle(size/2,size/3);
}
This produces:

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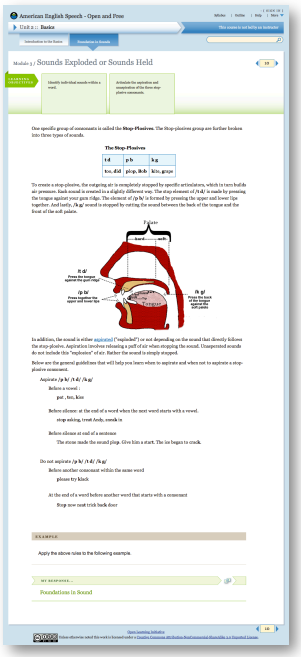

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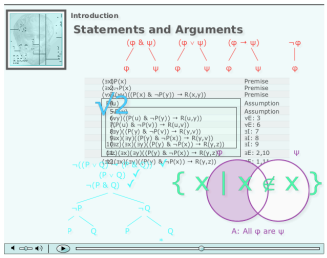
We begin in this chapter with a look at the nature of logic, introducing the fundamental notions of statements and arguments along the way.



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