Plan and design a Four-Stage Chain Reaction Device that meets challenge and rubric criteria on pages 1 and 2 below.

1. Think
2. Do
3. Test

Sketch/Describe Stage 1 of your Device, Including Trigger Mechanism Here:

Machine Type (One of the Simple Machines or Pendulum): ____________________________

Sketch/Describe Stage 2 of your Device Here:

Machine Type (One of the Simple Machines or Pendulum): ____________________________

Sketch/Describe Stage 3 of your Device Here:

Machine Type (One of the Simple Machines or Pendulum): ____________________________

Remember: Problems ARE NOT failures, they are an expected part of the design process!
Sketch/Describe Stage 4 of your Device Here:

Machine Type (One of the Simple Machines or Pendulum): ____________________________

Plans for Connecting Each Device Stage:

Follow through with your design plan and BUILD your device, then TEST and OBSERVE.

Testing Observations:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Does your Device function like you expected?  YES  NO

If you answered “YES” - Congratulations! You will score well on the Challenge Rubric. You may now move on to other lessons.

If you answered “NO” - Use your observations above and the Rubric to determine what problem needs troubleshooting, then use a copy of the Troubleshooting Idea Book Page to help solve that problem. Keep repeating this “THINK - DO - TEST” process with the troubleshooting pages, until your device functions correctly.

Remember: Problems ARE NOT failures, they are an expected part of the design process!
Chain Reaction Challenge Idea Book Page: Troubleshooting

Student Name(s): ________________________________
Teacher/Class: _______________________ Date: _______ Page #: ______

Use a copy of this Idea Book Page for each device problem you have to troubleshoot.

Sketch/Describe Your Device Problem Here:

Sketch/Describe Your Solution to the Problem Here:

Follow through with your solution and MAKE PLANNED CHANGES to your device, then TEST and OBSERVE.

Testing Observations:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Does your Device function like you expected? YES NO

If you answered “YES” - Congratulations! You will score well on the Challenge Rubric. You may now move on to other lessons.

If you answered “NO” - Use your observations above and the Rubric to determine what problem needs troubleshooting next, then use another copy of this Idea Book Page to help solve that problem. Keep repeating this “THINK - DO - TEST” process with troubleshooting pages, until your device functions correctly.

Remember: Problems ARE NOT failures, they are an expected part of the design process!