**Outline**

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| Outline | Notes to instructor |
| 1. Begin class discussion    1. Talk about wind up planes    2. What makes a rubber band powered plane unique   What should you consider when designing your plane? | Teacher instigates class discussion over planes and what factors should be considered when designing a rubber band plane. |
| 1. Challenge 1    1. Begin PowerPoint presentation    2. Walk students through presentation   Have students begin designing their planes | Teacher presents Airplane Design  PowerPoint for lesson. |
| . Challenge 1 Test   1. Have students complete their planes 2. Begin testing student's planes 3. Record which ones traveled the farthest   Why did the plane fly straight and far? | Teacher will supervise testing to make sure of no foul play. Take note of distances traveled by each plane. |
| 1. Class Discussion    1. Have best plane's individual/team give a presentation of why it flew well.    2. What factors contributed to its performance?    3. Examine other planes and compare the Differences.    4. Have students write up a report on why their plane performed the way it did.    5. Then have them write a paragraph about what they would do differently if they were given another chance.   H. Then have students write a hypothesis about what part of the plane is the biggest factor in how far it traveled. (balance, wings, etc.) - no wrong answer as long as students have legitimate reason to assume | Teacher leads a class discussion. Have students write down why planes did well/bad, what factors are most important, and what students would do differently if given the same challenge again. |
| 1. Conclusion    1. Have students turn in papers.    2. If there is leftover time, have students begin Challenge 2 (loop and spiral planes). | Teacher states there is no wrong answer as long as students have data and evidence to support their assumptions and reasoning. |