

Flight



Think of two great topics to do with flight... see mindmap. You will be comparing and contrasting these and creating great questions using higher level thinking from Blooms Taxonomy.

Bumble Bees and B52 Bombers



Presented by W P Grieve



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Bee Introduction

- It is said that the Bumblebee is an enigma of nature. In folklore it got a reputation that it shouldn't be able to fly, due to the size of its body compared to its wings. Is this true?



B52 Introduction

- B52's have flown since 1952 fighting in wars such as the Vietnam War. It apparently will stay in service until 2040, nearly 80 years after production has finished. It is a long-range, strategic heavy bomber capable of dropping or launching the widest array of weapons in the U.S. arsenal.



Thinking Questions

Explore connections between a **bee** and a **bomber**

- Which is the best flying machine?
 - What materials are used and how are they constructed? How are they powered? How do their wings work? Which has a more aerodynamic shape?
 - Try sub-bullet points like this for supporting questions
- What are the 3 most important **connections** between a **bee** and a **bomber**?
 - How do they **carry cargo**? What type and for what reasons? How **heavy**?
 - Write excellent thinking questions that help you “think” about the topic. Not interested in regurgitated information.
 - Use “compared to”, the most important three facts, the most important 3 reasons, to help get you thinking. See Blooms chart....



Bee & Bomber Cargoes

- Bee
 - The hairy hindlegs help wedge pollen grains so they can be carried
 - They carry nectar and honey in their stomach in their abdomen
 - They can carry their weight in pollen and nectar
- Bomber
 - Carries fuel, passengers and munitions (bombs)



B 52 Construction



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Bumble Bee Construction (Anatomy)

- Remember to answer thinking always about flight!
- The bee has three parts
 - The thorax which has the wings and legs attached and is mostly muscles, the biggest being flight muscles.
 - The Head for flight navigation and thinking
 - The abdomen which helps power flight



Bumble Bee Construction (Anatomy)

- Their four wings can pivot and flap (130-240 beats per second) so they fly like a helicopter
 - 10.8 - 16.2 kilometers per hour
 - They have to “exercise” to raise their temperature so they can fly



Bee and Bomber Connections



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Conclusions



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Bibliography

- [Wikipedia Entry](#)
- [B52 From Boeing](#)
- [US Centennial Site](#)

