# Africanized Honey Bees

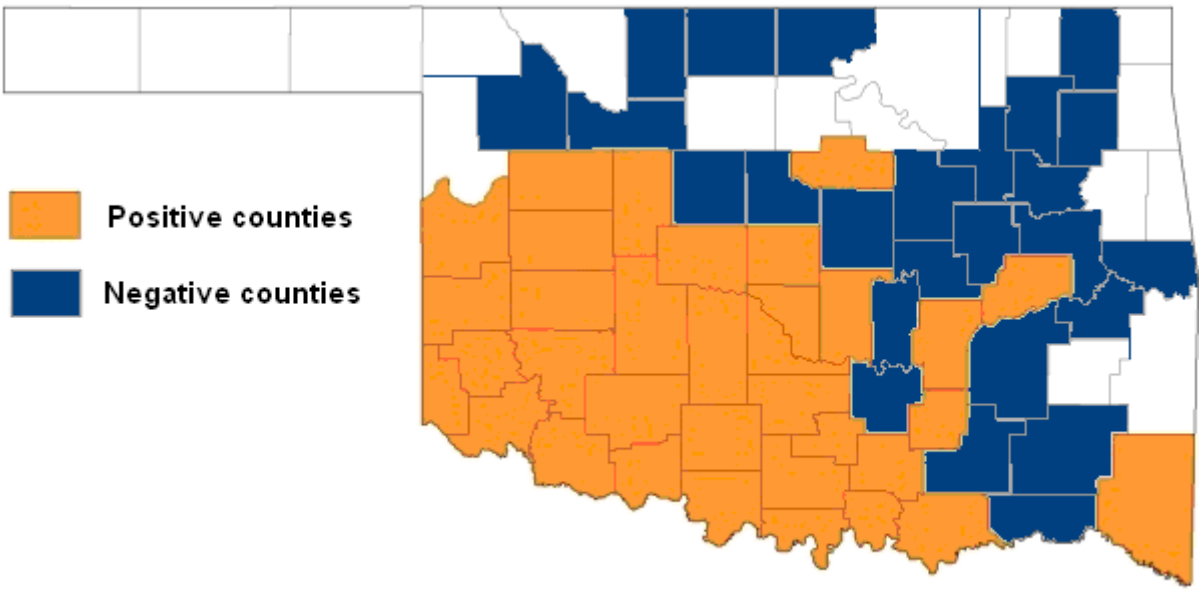
Data set OKWS0003 (source: http://entoplp.okstate.edu/ahb/)

**Directions:**

**Use the data set to develop 3-4 items in your group. Each item must fit both a content standard and a process standard. In addition, your group should develop items that range in DOK from 1-3, with emphasis on the higher end.**

| Content standards that statistics have shown students need more practice and help: | Process objectives that statistics have shown students need more practice and help: |
|---|---|
| 4.0; 5.0 | 3.1; 3.24; 3.3; 4.4 |

**In 1956, a Brazilian scientist, Warwick Kerr, imported Africanized Honey Bees to the Americas. Mr. Kerr intended to create a hybrid of bees between the Africanized Honey Bees and the European honey bees. This hybrid would create more honey than the European honey bees, but be less defensive than the Africanized honey bees. In 1957, some Africanized honey bees were accidentally released into forests nearby, and have since traveled to North America. The map below shows counties of Oklahoma that are positive for the Africanized honey bees at this time.**



# Animal Mass and Brain Mass

Data set OKWS0002 (source: http://www.mste.uiuc.edu/malcz/DATA/BIOLOGY/Animals.html)

**Directions:**

**Use the data set to develop 3-4 items in your group. Each item must fit both a content standard and a process standard. In addition, your group should develop items that range in DOK from 1-3, with emphasis on the higher end.**

| **Content standards that statistics have shown students need more practice and help:** | **Process objectives that statistics have shown students need more practice and help:** |
|---|---|
| **4.0; 5.0** | **3.1; 3.24; 3.3; 4.4** |

| Animal | Body Mass (kg) | Brain Mass (g) |
|---|---|---|
| Golden hamster | 0.12 | 1 |
| Guinea pig | 1.04 | 5.5 |
| Rabbit | 2.5 | 12.1 |
| Cat | 3.3 | 25.6 |
| Kangaroo | 35 | 56 |
| Grey wolf | 36.33 | 119.5 |
| Sheep | 55.5 | 175 |
| Jaguar | 100 | 157 |
| Pig | 192 | 180 |
| Cow | 465 | 423 |
| Horse | 521 | 655 |
| Giraffe | 529 | 680 |
| Asian elephant | 2547 | 4603 |
| African elephant | 6654 | 5712 |
| Triceratops | 9400 | 70 |
| Dipliodocus | 11700 | 50 |
| Brachiosaurus | 87000 | 154.5 |
| Rhesus monkey | 6.8 | 179 |
| Chimpanzee | 52.16 | 440 |
| Human | 62 | 1320 |

# Effects of Microgravity

Data set OKWS0001 (source: http://spaceflight.nasa.gov/history/shuttle-mir/science/fb/sc-fb-green.htm)

**Directions:**

**Use the data set to develop 3-4 items in your group. Each item must fit both a content standard and a process standard. In addition, your group should develop items that range in DOK from 1-3, with emphasis on the higher end.**

| **Content standards that statistics have shown students need more practice and help:** | **Process objectives that statistics have shown students need more practice and help:** |
|---|---|
| **4.0; 5.0** | **3.1; 3.24; 3.3; 4.4** |

During an experiment to determine the effects of microgravity on seed growth, scientists planted mustard seeds brought from Earth on the Mir Space Station. Part of the investigation included collecting data on plant growth over several generations. The scientists observed that the first generation of seeds had growth normal to that on Earth. However, successive generations, were smaller. The scientists concluded that the smaller plants were an effect of the diminished growth inside the seeds due to microgravity.