Datasets appropriate for everyone

1. Life History data for Stickleback in Benka Lake
Dataset consists of data for 109 reproductive female threespine stickleback in Benka Lake, collected during one season. Data collected for each female are: the ecotype they belong to (whether they are benthic or limnetic), standard length, mass, number of eggs in clutch, mass per egg, total clutch mass, and clutch mass relative to body mass.

2. Tail vertebral length in a chameleon (Chamaeleo dilepis)
Dataset consists of data for 79 specimens of one species of chameleon. Specimens form an ontogenetic series, from neonate/juvenile to adult, and belong to both sexes. Measurements for each specimen include head length, snout-vent length, total tail length, trunk length (SVL-HL), and the length of each vertebra in the sacrum and tail.

3. Stickleback body shape evolution under different predatory regimes
Dataset consists of data for 159 stickleback specimens from four lakes, two that have pike predators in them and two that do not. Data were collected in the early 90s, just when pike were introduced and 2010-2011, after stickleback had some time to evolve in response to predators. Measurements taken for each fish are: standard length, mass, body depth, pelvic girdle length and width, pelvic spine length, ascending process length and width (an armor plate), number of lateral plates (armor plates), lateral plate length and width, The length of two dorsal spines, pterygiophor length (a bone supporting the dorsal spine), relative box size (a measure how relatively deep the body is, and therefore, hard to swallow), and effective body depth (a measure of body depth that includes the dorsal and pelvic spines – again influencing how hard a fish is to swallow).

4. Stickleback life history evolution
Dataset consists of 552 female specimens of threespine stickleback from Bible Camp Lake, collected between 1990 and 2007, and undergoing rapid evolution during that time. For each fish, data collected are: age of the female, standard length, mass, number of eggs in clutch, reproductive stage (NR – not reproductive, EN – eggs developing, can be counted, Lay – Eggs mature and give accurate count and mass data), mass of an individual egg, and total clutch mass.

5. Tail autotomy and locomotion in a lizard
The dataset consists of 24 individuals of the whiptail lizard, Aspidoscelis sonorae, including morphometrics, and also information on their locomotion. Each lizard was run once with its tail and once after it dropped as much of its tail as it could. Data include a specimen ID, whether the tail was intact (0) or removed (1), measurements of snout-vent length, total tail length, head length, mass with tail intact, mass of the part of the tail that was removed, length of the part of the tail that was removed, temperature at which each running trial was done, maximal and average velocity during the run, maximal acceleration during the run, axial angle (the maximal angle to which the body was bent during locomotion), duration of the stride, duration of the step (in seconds), length traveled during a stride and a step, the angle to which the hind limb was protracted (brought forward), and the angle to which the hind limb was retracted (moved
backward). A stride is the complete movement cycle of the limb from foot up to foot up (so contains both the part when the foot is in the air and in contact with the ground). A step is only the part of the stride during which the foot is in contact with the ground.

6. Evolution of form and locomotor function in lizards
The dataset includes data for 94 specimens belonging to eight species. For each specimen, body shape measurements were taken: snout-vent length, body length (SVL-HL), body width, head length, front limb length, femur length, tibia length, foot length (without the toes), and length of the longest toe. Two performance variables are included: maximal running velocity and maximal acceleration. A phylogeny is also provided that gives the relationships among the species.

7. Evolution of ontogeny in lizard limbs
The dataset includes data for 303 specimens belonging to seven species. Each species sample is an ontogenetic series, ranging from neonate/juvenile to adult. The sex of each specimen is identified. The following measurements were taken for each specimen: snout-vent length, head length, thigh length, shin length, foot length, and the length of the longest toe. A phylogeny is also provided that gives the relationships among the species.

Datasets that are a little more complex and may be appropriate for students that would like an extra challenge

8. Fish predators and lake characteristics in Alaska
The dataset includes information for 187 Alaskan lakes, giving the location, elevation, and coordinates of each lake, basic information about how well defended stickleback in the lake are, information about which predators are present in each lake, 18 water chemistry and quality characteristics for each lake and some basic physical characteristics for each lake.

9. Lizard vertebral evolution
This dataset contains data for 679 species of lizard. Each species is placed in a larger clade, number of vertebrae are given, as are the number of toes on the front and hind limbs. Measurements are also provided of head length and width, body length and width, thigh width, total hind limb length, foot length, and tail length (when the lizard had an intact tail). Lengths and widths are also given for two vertebrae in the neck, two vertebrae in the trunk, two vertebrae at the base of the tail, and two vertebrae midway down the tail. A phylogeny of the species is also provided.

10. Fish genome size and diversity
The dataset contains total genome sizes for many fish species, downloaded from an online database. This information is then summarized for “orders” and “families” of fishes, so that for each clade, you have mean, minimum, and maximum genome size, the number of species sampled for genome size, and the diversity (number of species and number of higher clades, like genera). At the order level, there is also information on the number of species in each clade that live in fresh water. A fish phylogeny is not provided, but is needed to analyze the data properly. This data should be viewed as quite advanced, and attempted only by a student that is willing to do extra background research and really think deeply about what questions they can address with the data.