

Rookery Timeline

OBJECTIVE

Students will learn about the sequence of events at a fur seal rookery through creation of a timeline.

TIME REQUIRED

25 minutes

BACKGROUND

The Create a Rookery Timeline Activity demonstrates the sequence of events over a one-year period at a fur seal rookery. As fur seals of different ages arrive on the rookery, the structure of the rookery changes.

The activity can be used to introduce concepts of northern fur seal seasonality and rookery structure:

- males establish territories, which they defend from other males
- females gather in the same areas each year to have their pups (site fidelity)
- non-breeding seals gather in haulouts
- pups gather into groups called “pup wads” when their mothers are not on the rookery

The activity can also introduce life history:

- adult males stay on the rookery to defend their territory and to mate with females
- adult males fast during the breeding season
- females alternate periods of time at the rookery to nurse their pups with trips out to sea to feed
- females only have one pup per year.

MATERIALS

Large sheet of butcher paper (five to six feet long) or smaller pieces taped together to form a long line.

- (optional) pictures or drawings of northern fur seal male, female, juvenile and pups - can be taped or glued to the timeline at the appropriate locations.
- Markers

PROCEDURES

For younger grades, the timeline can be a class project, with images pasted onto a large timeline at the front of the class. For older students, each student can create his or her own timeline, or they can work in groups of two to four students.

- Introduce the concept of a timeline by using the school year as an example. Add holidays and any other significant events.
- Have students draw a timeline on their paper and divide it into 12 months: January to December (or May to December, if space is an issue)
 - ◆ Ask the students to add the following events to the rookery timeline:
 - i. adult males arrive
 - ii. adult females arrive
 - iii. pups are born
 - iv. adult males leave
 - v. pups leave
 - vi. adult females leave

DISCUSSION

Discuss why the rookery changes over the season. Lesson 3 PowerPoint or Activity 3.3 Create a Rookery Teacher Key can be used as a reference.

- Why do all the seals come to the rookery at the same time of year?

To mate and raise pups.
- Why do the fur seals leave the rookery before the winter?

Cold weather/storms; can feed farther away where waters are more productive in winter; pups are weaned, so females don't have to stay around the rookery.
- What is a similar timeline in your life?

Compare the rookery cycle to the school year – teachers come back to school first, then students; limited amount of time (August to May); at the end of the school year, students leave school and when they come back in the fall, they are in the next grade.
- Can you think of other examples of seasonal cycles in the year?

EXTEND AND EXPLORE

Add the juvenile males to the timeline. Males reach breeding age between seven and nine years of age (females reach breeding age earlier, at age three to five years). Juvenile males gather on haulouts until they are able to breed, then they move closer to the rookery and challenge territorial males.

Technology – older students can learn Excel to recreate the timeline on the next page.

ACTIVITY 3.2 TEACHER KEY

Create a Rookery Timeline

The following events should be on the rookery timeline:

- i. **May:** Adult males arrive at the rookery.
- ii. **Late June–August:** Adult females begin to arrive at the rookery. Oldest arrive first, youngest arrive last, with most females arriving in July.
- iii. **June–July:** The pup of each female is born a few days after she arrives at the rookery.
- iv. **July:** Adult females stay at the rookery for one week after the pup is born, to nurse the pup; after a week, the female starts alternating feeding trips at sea with visits ashore to feed the pup.
- v. **May:** Juvenile males start arriving at the haulouts in May, with older juveniles returning first and progressively younger males arriving later.
- vi. **Late July:** Pup wads (big groups of pups of all ages that play and hang out together) form at the rookery since their mothers are out at sea feeding.
- vii. **Mid to Late August:** Adult males begin to leave the rookery; older juvenile males start to move to the edges of the rookery.
- viii. **Mid-November:** Pups wean from their mothers (they stop nursing) and leave the rookery after the first winter storms.
- ix. **Late-October–early December:** Adult females and juveniles leave the rookery. Adult females without pups, or whose pups have died, leave in late October/early November; adult females with pups leave after their pups have weaned and left the rookery.

Activity 3.1 Northern Fur Seal Rookery Timeline

	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Adult males			Adult males arrive on the rookery in May. Adult males leave the rookery in mid to late Aug.								
Adult females				Females arrive late June to August (older females first, younger ones later) with most arriving in July. Females have pups within a few days of their arrival on rookery, then alternate nursing pup on shore with feeding trips at sea. Females leave the rookery in mid-November after their pup leaves.							
Juvenile males			Juvenile males start to arrive at haulout sites in May, with older males arriving first, and progressively younger males arriving later. Juvenile males are excluded from the rookery by adult males. Older juveniles start to come into the rookery in late August-early Sept. after adult males leave.								
Pups				Pups are born a few days after a female arrives on rookery. As they grow, pups group together into “pup wads.” Pups leave the rookery in November after the first winter storms.							