What is happening to the Asian elephants?

Do you know?

An inquiry based integrated program for Primary school students.

drawing TO LEARN

Australian Curriculum:
Biological sciences

Living things have structural features and adaptations that help them to survive in their environment

Living things including plants and animals depend on each other to survive.

Living things have life cycles

Science involves testing predictions by gathering data and describing patterns and relationships to develop explanations of events and phenomena

Geography: Develop geographical questions to investigate and plan an inquiry.

The types of vegetation and the significance of that vegetation to the environment.

The different perspectives on how this environment can be protected .

The natural resources in the local environment that need to be sustained.

An individual action plan that can be taken in response to a local geographical challenge

Literature:

Read different texts using text processing strategies to build understanding.

Personal responses to ideas, characters and viewpoints

Create literacy texts using realistic and fantasy settings and characters to develop a storyline.

Literacy: Build comprehension strategies to build literal and inferred meaning.

Plan rehearse and deliver oral presentation for defined audiences incorporating accurate and sequenced content.

Connecting ideas to personal experiences: present a personal point of view

Language: Evaluative language: Learn extended and technical vocabulary to express opinions.

Understand the language of opinion and feeling and the language of factual reporting

Visual language: Explore the effect of framing an image, placement of elements in the mage and salience of composition choices of moving images in the creation of a 1 minute visual clip.

Maths : Statistics and probability: Chance: Collect data, organize into categories and create displays using tables, graphs.

Measurement: Compare objects using familiar metric units of area and volume

Visual Arts: Use materials, techniques and processes to explore visual conventions when making art works:

Applying art and design techniques effectively and safely.

Manipulating and experimenting with combinations of various materials

Practicing a variety of techniques and materials to interpret a theme or subject

Cross curriculum priorities: Asia and Australia's engagement with Asia.

Reference: National Curriculum of Australia

Introduce Elephant inquiry into classroom with a Discovery table with elephant texts/ words/cards/ plastic elephants/scenes or diorama etc., to stimulate initial Inquiry question:

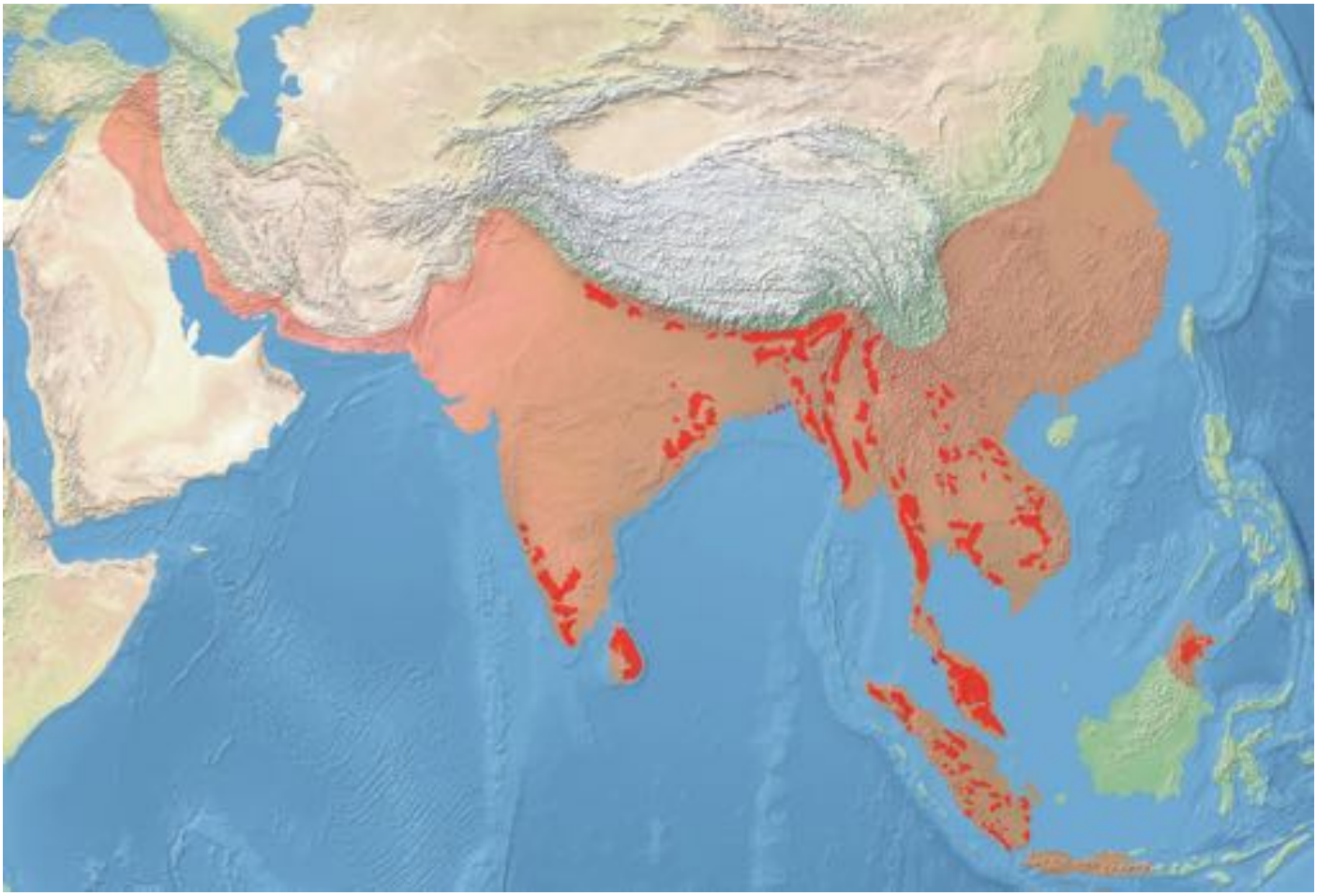
What is happening to the Asian elephants?
Do you know?

Put out a few Fun fact yes/ no/ could be questions to tune the students in e.g.

1. Elephants spend 75% of their lives selecting preparing and eating food? Could that be true?
2. Elephants are herbivores or carnivores?
3. Elephants eat mostly at night? When do they sleep then?
4. Drink up to 50 gallons a day? What distance can they walk away from water?
5. An elephant's trunk can lift 450Lbs? How much is that?
6. An elephants trunk has 150,00 muscles? What does it do?
7. The elephant is the largest land animal?
8. A fully grown elephant can reach 13 feet high? Which is…..?
9. Weigh 14,000 lbs?
10. 20-50 elephants live together in a herd? Do they live as a family or two families or???
11. Baby elephants develop inside their mother's womb for 22 months?
12. Elephants greet each other by touch? How?
13. Elephants communicate affection for each other by touching trunks or rubbing shoulders together?

Then:
Explore some fiction and non-fiction texts and then images about elephants with the student's in class for a day or two. Discuss what they are noticing:
Three subspecies of Asian elephant: Sri Lankan, Indian and Sumatran. What species are the Laotian elephants and how many are estimated to exist in the wild? 1,300???

Set up groups of 4 students to work together with materials: glue, scissors, calico, pens, paint etc.,



1.Discuss terrain: Look at the map of the distribution of the Asian elephant populations. Look at the Laotian map to show where elephants live in Laos.
What can they see from the map? What are they noticing?
Then:
2 A. Show a series of images of habitats for discussion.
Deserts/ rainforest/floodplains/snow/ Laotian mountains/ forests.

- Where do elephants live?
- What is their desired habitat?
- What keeps them happy and healthy?

2 B. Choose an image from a series of images. Take this apart.
What does this terrain consist of?

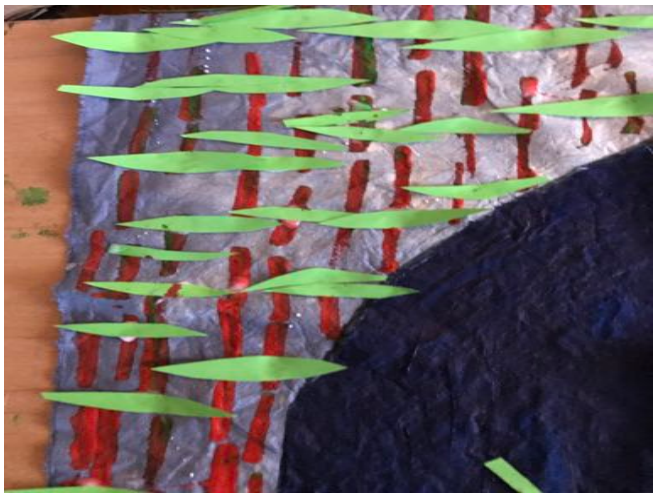
- Plants?
- Animals?
- Trees?
- Soil?

Make a long list.

Could an elephant live in any of these places here? Why do you think this?

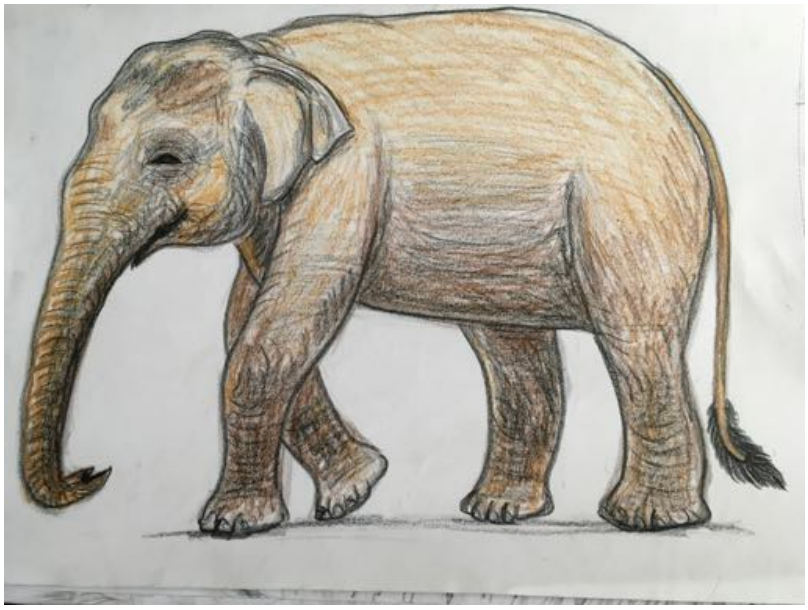
2 C. Then on a large 4/4 piece of calico create the background: 'Habitat for an elephant' Crayon rub or block print leaves to create mountains, trees, leaves, branches, sticks under the elephant's feet etc.,

Asian elephants inhabit grasslands, tropical evergreen forests, semi-evergreen forests, moist deciduous forests, dry deciduous forests and dry thorn forests, in addition to cultivated and secondary forests and scrublands.
Over this range of habitat types elephants occur from sea level to over 3,000 m (9,800 ft). In the eastern Himalaya in northeast India, they regularly move up above 3,000 m (9,800 ft) in summer at a few sites.

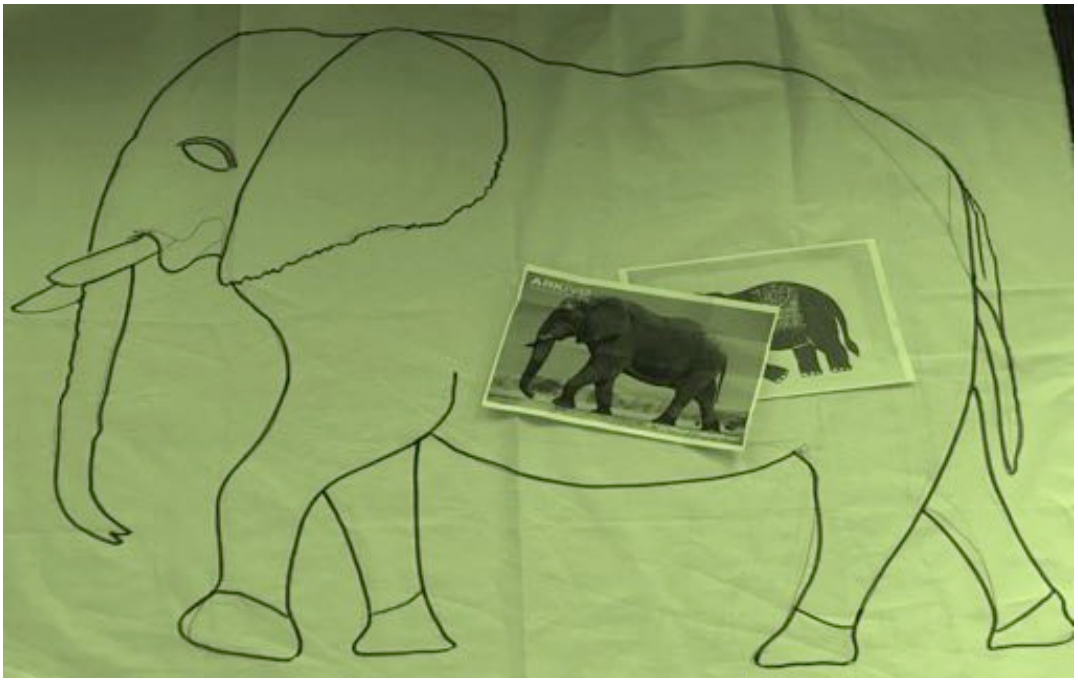


3. 8/10 laminated photos of Asian elephants. Share amongst groups.
List common features of elephants. What are they?
What makes an elephant an elephant?

4. Students mind map this in groups.
Discuss amongst themselves…..



Divide image into 4/4 squares. Fold large rectangle of calico with habitat background into 4/4 squares. Transfer elephant image from photo to calico square by square using pencil then, black pen. Show folds on elephant skin. Think about the skin, trunk, ears, legs, feet, hooves of an elephant and what adaptions have helped them to survive.



6. Discuss Mind maps on whiteboard or large sheet of paper:

Then: Watch youtube clips of Asian elephants/ Octagon elephant card, ask a Zookeeper or Elephant Conservationist or Mahoot to talk to the students about their work or read, read, read texts on elephants. Discuss the endangered nature of the Asian elephant and some of the causes for this with the group.

7. Then each group must explore information to clarify what they know about the elephant. Each member of the group takes responsibility for finding out more about one of the concepts below:

- Size
- Shape
- Families
- Ivory
- Skin: purpose/ texture/ preservation
- Life cycle
- What do they eat?
- Sleep
- Smell
- Trunk….purpose and structure
- Touch
- Movement
- Feet/ hooves
- How long do they live?
- How accessible is their food to them?
- Do they need water? How much? From where?

More?

8. Use a jigsaw process. Each student has 1 concept about the elephant to find out. Where will they find this information.

Then share their findings with their group using a jigsaw process.

Then:

9. Help the students in their group to develop an inquiry question about the elephant such as:

"How do we care for our elephants?

What do WE need to do…..?" Print it as a banner for the wall….

10. Use crayon to outline the elephant body on the calico: Water down paint or dye. Make sure the skin folds are distinguishable and the rough surface of the skin is highlighted with crayon.

11. Skeleton: Perhaps create the skeleton of an elephant using wire.

In general, the Asian elephant is smaller than the African elephant and has the highest body point on the head. The back is convex or level.

The ears are small with dorsal borders folded laterally.

It has up to 20 pairs of ribs and 34 caudal vertebrae.

The feet have more nail-like structures than those of African elephants—five on each forefoot, and four on each hind foot.

12. Hide/ skin: What is the purpose of such a tough skin?

Touch activity: Go outside and find something that helps you understand how tough the elephants skin is. What could you find to demonstrate this outside? Paint elephant body.

Skin colour is usually gray, and may be masked by soil because of dusting and wallowing. Their wrinkled skin is movable and contains many nerve centers.

It is smoother than that of African elephants, and may be depigmented on the trunk, ears, or neck.

The epidermis and dermis of the body average 18 mm (0.71 in) thick; skin on the dorsum is 30 mm (1.2 in) thick providing protection against bites, bumps, and adverse weather. Its folds increase surface area for heat dissipation. They can tolerate cold better than excessive heat. Skin temperature varies from 24 to 32.9 °C (75.2 to 91.2 °F). Body temperature averages 35.9 °C (96.6 °F)

13. Food: A large 1 kilogram bag. Students go outside and collect elephant food… try to fill a 1 kilogram bag.

The elephant consumes up to 150 kg (330 lb) of plant matter per day. How do we sustain the land so that they can eat this much food?

They are classified as megaherbivores. They are generalist feeders, and both grazers and browsers, and were recorded to feed on 112 different plant species, most commonly of the order Malvales, and the legume, palm, sedge and true grass families.

They browse more in the dry season with bark constituting a major part of their diet in the cool part of that season.

14. Water: 80-200 litres a day

Use bottled water. Show a one litre bottle. How much would 80 litres be? Collect all the water bottles in the room. Is this 80 litres?

Where do they get this water from?

Do they need to stay close to water? How close?

They drink at least once a day and are never far from a permanent source of fresh water.

They need 80–200 litres of water a day and use even more for bathing.

At times, they scrape the soil for clay or minerals.

15. Trunk

The distinctive trunk is an elongation of the nose and upper lip combined; the nostrils are at its tip, which has a one finger-like process.

The trunk contains as many as 60,000 muscles, which consist of longitudinal and radiating sets.

The longitudinals are mostly superficial and subdivided into anterior, lateral, and posterior. The deeper muscles are best seen as numerous distinct fasciculi in a cross-section of the trunk. The trunk is a multipurpose prehensile organ and highly sensitive, innervated by the maxillary division of the trigeminal nerve and by the facial nerve. The acute sense of smell uses both the trunk and Jacobson's organ.

Elephants use their trunks for breathing, watering, feeding, touching, dusting, sound production and communication, washing, pinching, grasping, defense and offense.

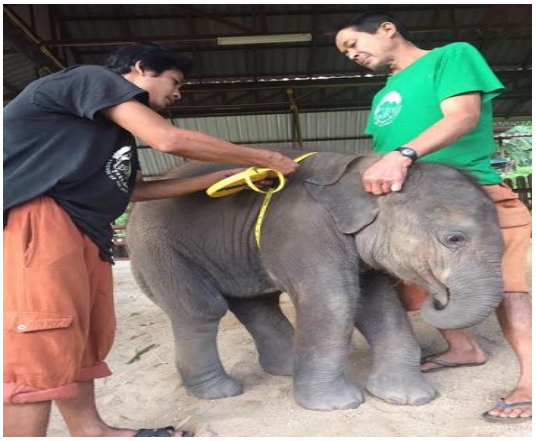
The "proboscis" or trunk consists wholly of muscular and membranous tissue, and is a tapering muscular structure of nearly circular cross-section extending proximally from attachment at the anterior nasal orifice, and ending distally in a tip or finger.

The length may vary from 1.5 to 2 m (59 to 79 in) or longer depending on the species and age.

Four basic muscle masses—the radial, the longitudinal and two oblique layers—and the size and attachments points of the tendon masses allow the shortening, extension, bending, and twisting movements accounting for the ability to hold, and manipulate loads of up to 300 kg (660 lb).

Muscular and tendinous ability combined with nervous control allows extraordinary strength and agility movements of the trunk, such as sucking and spraying of water or dust and directed air flow blowing.[

The trunk can hold about four litres of water. Elephants will playfully wrestle with each other using their trunks, but generally use their trunks only for gesturing when fighting.



16. Tusks serve to dig for water, salt, and rocks, to debark and uproot trees, as levers for maneuvering fallen trees and branches, for work, for display, for marking trees, as weapon for offense and defense, as trunk-rests, and as protection for the trunk. Elephants are known to be right or left tusked.
Female Asian elephants usually lack tusks; if tusks—in that case called "tushes"—are present, they are barely visible, and only seen when the mouth is open. The enamel plates of the molars are greater in number and closer together in Asian elephants. Some males may also lack tusks; these individuals are called "filsy makhnas", and are especially common among the Sri Lankan elephant population. Furthermore, the forehead has two hemispherical bulges, unlike the flat front of the African elephant. Unlike African elephants which rarely use their forefeet for anything other than digging or scraping soil, Asian elephants are more agile at using their feet in conjunction with the trunk for manipulating objects.

16.Ears: Significantly different to the ears of African elephants .. Why?
The ears are small with dorsal borders folded laterally.
What do we know about elephant's hearing?
How well do they hear?
Use Nimbus app or Sound cloud of Elephants communicating or sleeping together.

17. Legs/ feet/ hooves: Smashing through the jungle on their big strong legs.
The feet have more nail-like structures than those of African elephants—five on each forefoot, and four on each hind foot.

Designs on legs/ feet with ribbon/sequins/ felt….glueing

18. Stitch rug on back of elephant mural:
Squares joined together: Wools/ felt/ buttons /cottons.

19. Eye bead or button for elephant eye with sequins surrounding.

20. Create little felt elephants/ puppets or finger puppets to hang on ribbons from the bottom of the mural to highlight the diminishing numbers of Asian elephants:

21. Inquiry question:

What is happening to the Asian elephants? Using the mural as a background:
Discuss and answer this question in a 2 minute video clip:
What do we need to do to ensure that they are protected in our country?

Create a rubric for assessment of this:

Elephant certificate:

I know how many elephants there are estimated to live in Laos. I know what and how they eat/drink/ move/hear/ see .
I know where and how they live.
I know how elephants connect to their family and their world.
I know how de-forestation affects their habitat.
I know about the work of Elephant protection and conservation agencies in Asia.
I know about the illegal trade of ivory.
I know what is happening to the elephants in Laos in 2017.
I am committed to their continued existence in my country.