**Year 7/8 AC: Science & Year 7/8 AC: Italian** Antonella.Macchia@sa.gov.au

Ideas for an integrated learning experience with an excursion to the local zoological park

BIOPARCO di ROMA
nel cuore di Villa Borghese

"*Si conclude chiedendo una maggiore collaborazione tra zoo e musei italiani, a tutto vantaggio della comunità scientifica nazionale."*

1. What is the Zoological Society in Italy requesting? Explain how society and science might benefit from this request.
2. The zoo in Rome is one of the oldest in the world. Today it is known as the BioParco di Roma. Why do you think the name has changed from a zoo to a biological park?
3. The latest addition to the BioParco is a zebra named 'Primo'. Aside from when Primo is used as an Italian name (eg Café Primo), what are the two language classifications for this word? Is there a connection to the naming of the zebra in the BioParco?
4. The BioParco in Rome features two kangaroos. What special conditions would the Roman BioParco need to provide so that the kangaroos remain healthy?
5. Since Charles Darwin's 1859 theory of evolution how has the organised study of the animal kingdom changed from ancient to modern times? What might this have looked like in 1911 when the original zoo opened in Villa Borghese?
6. What is the cultural background of Carlos Linnaeus? What was his contribution to science? How would Carlos Linnaeus' theory apply today to lions, tigers, panthers, leopards at the BioParco?
7. Visit the exhibits of the lions, tigers, panthers, leopards at your local zoo. List these animals in Italian and draw up a table reporting your observations about their features in the **target language.**
8. Do their features and taxonomy names place them in similar families and species?
9. Who was the Arabian scientist that put forward the idea of the food chain?
   If this scientist were to be in your excursion group today, roughly sketch the three different food chains that he would most likely draw. Label the food chains in the **target language**.
10. Find and list two animals that are not native to Australia. What special features do they have in their enclosures? How do these features help the animals to survive away from their natural habitat?

**Investigation on animals in their habitat**

1. Research endangered fauna in Italy and in Australia.
2. Draw up the similarities and differences in the habitat of this endangered fauna and compare the impact by human habitat- e.g. deforestation, pollution, feral animals, pests and weeds. http://www.naturalresources.sa.gov.au/home
3. Investigate why some species are more likely to be endangered over others due to difference at the cellular level. (*Could be linked to year 8 after students have explored the cell structures and have an understanding between these structures across species. Could also explore the impact on reduced biodiversity and loss of genetic variation).*
4. Examine how this links to the human impact on environmental conditions.
5. Observe a range of animals at the local zoo and respond to questions on their features, diet and conditions of habitats in the **target language**. This includes compiling an adaptation table in the **target language.**
6. Select an endangered animal from one of the exhibits. Observe the species during your visit to the zoo and research the impact on this species. Prepare a report on your findings in the **target language.**

## Australian Curriculum: Science

**Biological sciences**
The biological sciences sub-strand is concerned with **understanding living things.** The key concepts developed within this sub-strand are that: a diverse range of living things have evolved on Earth over hundreds of millions of years; **living things are interdependent and interact with each other and their environment;** and the form and features of living things are related to the functions that their body systems perform. Through this sub-strand, students investigate **living things, including animals**, plants and microorganisms, **and their interdependence and interactions within ecosystems.** They explore their life cycles, body systems, structural **adaptations** and behaviours, how these features aid survival, and how their characteristics are inherited from one generation to the next. Students are introduced to the **cell** as the basic unit of life and the processes that are **central to its functions.**

**Year 8 Achievement Standard**
By the end of Year 8, students compare physical and chemical changes and use the particle model to explain and predict the properties and behaviours of substances. They identify different forms of energy and describe how energy transfers and transformations cause change in simple systems. They compare processes of rock formation, including the timescales involved. They **analyse the relationship between structure and function at cell, organ and body system levels**. Students examine the different science knowledge used in occupations. **They explain how evidence has led to an improved understanding of a scientific idea and describe situations in which scientists collaborated to generate solutions to contemporary problems. They reflect on implications of these solutions for different groups in society.**

**Students identify and construct questions and problems that they can investigate scientifically**. They consider safety and ethics when planning investigations, including designing field or experimental methods. They identify variables to be changed, measured and controlled. Students construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions. They explain how modifications to methods could improve the quality of their data and apply their own scientific knowledge and investigation findings to evaluate claims made by others. **They use appropriate language and representations to communicate science ideas, methods and findings in a range of text types.**

**Year 7 Achievement Standard**
By the end of Year 7, students describe techniques to separate pure substances from mixtures. They represent and predict the effects of unbalanced forces, including Earth's gravity, on motion. They explain how the relative positions of Earth, the sun and moon affect phenomena on Earth. They analyse how the sustainable use of resources depends on the way they are formed and cycle through Earth systems. **They predict the effect of human and environmental changes on interactions between organisms and classify and organise diverse organisms based on observable differences. Students describe situations where scientific knowledge from different science disciplines and diverse cultures has been used to solve a real - world problem.** They explain possible implications of the solution for different groups in society.

**Students identify questions that can be investigated scientifically.** They plan fair experimental methods, identifying variables to be changed and measured. They select equipment that improves fairness and accuracy and describe how they considered safety. Students draw on evidence to support their conclusions. They summarise data from different sources, describe trends and refer to the quality of their data when suggesting improvements to their methods. **They communicate their ideas, methods and findings using scientific language and appropriate representations.**

## Australian Curriculum: Languages (Italian)

**7-10 Sequence**
**Year 7 and 8 (Year 7 Entry) Achievement Standard**
By the end of Year 8, students engage in social interaction to exchange greetings and to share ideas and information related to their personal, social and school worlds. They use known phrases to exchange ideas and opinions, for example, Non mi piace la pallacanestro.
They use language to interact and to respond to classroom instructions, questions and directions. They approximate Italian sound patterns such as consonant combinations, clear vowel sounds and unaspirated consonants. They use gesture and some formulaic expressions to support oral interaction. Students use well-rehearsed language related to their personal experiences (for example, stating preferences in sports, leisure activities and entertainment), in both spoken and written forms, and predominantly in the present tense. **They demonstrate understanding of information from a range of factual and creative texts.** They use learnt structures to create texts such as, captions, descriptions, conversations and correspondence, providing information about themselves, their personal worlds and immediate needs, interests and preferences. **They produce simple descriptions with appropriate use of definite and indefinite articles, adjectives and adverbs. They connect ideas using conjunctions such as ma, però, anche, perché and invece to create simple texts using known vocabulary and structures.**

**Students identify similarities between Italian and English and understand that they are related languages which borrow from each other. They know that that literal translation between languages is not always possible**. They reflect on how culture is evident in experiences, images and texts. They understand and use metalanguage to explain aspects of language and culture, and use simple statements to identify features of different text types. They know that language reflects contexts of situation and culture, and identify differences between standard, dialectal and regional forms of Italian. **They analyse the** impact of technology and media on communication and language forms, the influence of Italian and English on one another, and the **interrelationship of language and culture.** They reflect on how they interpret and respond to aspects of Italian language and culture, and to intercultural experience, and identify how their response may be shaped by their own language(s) and cultures.

**F-10 Sequence**
**Year 7 and 8 Achievement Standard**
By the end of Year 8, students use spoken and written Italian to interact in a range of personal and social contexts. They describe or present people, places, events or conditions; discuss likes, dislikes and preferences; present information; recount and narrate events; and talk about personal, social and school worlds. **They understand main points and some specific details in a range of texts organised around known content and including some unfamiliar language.** They express and understand feelings when corresponding with others, making connections between language used and cultural concepts expressed. **They respond to and create simple informational and imaginative texts.** Le materie che studio sono l'inglese, la matematica, le scienze e la storia. They express views on familiar topics and make comparisons, adding their own opinions or reasons. They apply their understanding that texts vary according to purpose and audience, and use contextual clues, questioning and bilingual dictionaries to identify, interpret and summarise the meaning of familiar and some unfamiliar language. They give some justification for their interpretations of texts. **They ask questions and seek clarification. Students create cohesive and coherent texts for different purposes on a range of familiar topics, using appropriate language structures and vocabulary,** including different modal verbs and tenses. **They use conjunctions, adjectives and adverbs** to elaborate meanings.

Students understand and use metalanguage to explain aspects of language and culture. They identify features of text types such as letters, emails, descriptions and narratives. They know that language is chosen to reflect contexts of situation and culture, and identify differences between standard, dialectal and regional forms of Italian. They analyse the impact of technology and media on communication and language forms, **the influence of Italian and English on one another, and the interrelationship of language and culture. They know that languages do not always translate directly. They**

**reflect on how they interpret and respond to intercultural experience, and to aspects of Italian language and culture,** and discuss how their responses may be shaped by their own language(s) and culture(s).