

# Stability and Motion: Forces and Interactions

## Introduction

“I love field trips! Don’t you, Angelina?” asked Mylo.

“Of course,” Angelina replied. “No homework, no classwork, no learning new things.”

“I’m learning a lot today,” said Suzi. “If you just look around, you can learn tons of new things at the zoo.”

“You’re right,” said Angelina as they walked through the zoo. “I guess I did learn that koalas are not bears and that they have two thumbs on each hand to help them climb trees. It looks like we are going to the tiger exhibit next; I bet we can learn something new there.”

“I know all about tigers,” said Mylo excitedly. “I did a report on them last year. I know that their tails help them balance when they make tight turns and that their skin is striped just like their fur.”

“Aw, that’s sad,” said Suzi as she stood reading a sign by the tiger enclosure.

“Why?” asked Mylo. “I don’t think the tigers care if their skin has stripes.”

“The stripes are not sad, that’s actually pretty interesting,” said Suzi. “I’m talking about the tigers being endangered. This sign says that there are less than 3,200 tigers left in the world and that 93 percent of their range has been lost in the past 150 years.”

“What does endangered mean?” asked Mylo. “I think humans are in more danger from tigers than they are from us.”

“Not in danger, endangered,” said Suzi. “It means that they could become extinct and we would not have any tigers left on Earth.”

“Oh no!” exclaimed Angelina as she looked at the tiger enclosure. “That tiger really is in danger!”

“Endangered, not in danger,” Suzi corrected as she continued to read the sign. “We just went over that.”

“No really, look at that tiger!” Angelia said as she pointed to the tiger enclosure.

The friends quickly rushed over to the tiger enclosure to take a closer look. A tiger was trapped in the deep moat that surrounded the habitat where she lived. Mylo, Suzi, and Angelina watched as the tiger paced back and forth looking for a way out.

“This must have just happened,” said Suzi. “I don’t see any zookeepers or other adults trying to help. We need to tell someone right away!”

“Ms. Morales! Ms. Morales! Come quick!” Angelina shouted.

“I said tell someone, not scream at someone,” said Suzi as she rubbed her ears. “I bet even the tiger heard you that was so loud.”

“I’m sure the tiger heard you,” said Mylo. “I read that tigers use their eyes and ears to hunt, so they must have great hearing.”

Angelina, Suzi, and Mylo told their teacher, Ms. Morales, about the tiger. She hurried off to alert the zoo staff. The other teachers on the field trip took the students to a picnic area where they were to have lunch. The three friends sat down together and began talking about the tiger.

“I wish I could just reach down there and pick the tiger up,” said Suzi.

“Why can’t you?” asked Mylo.

“Remember what we read?” asked Suzi. “Tigers can weigh up to 600 pounds! I can’t lift a 600 pound tiger.”

“Of course not,” answered Mylo. “But what if we built something to lift the tiger out?”

“I have paper and pencils with me,” said Angelina. “Let’s sketch some of our ideas; maybe we can give our drawings to the zookeepers who are going to rescue the tiger.”

“Great idea, Angelina!” exclaimed Suzi. “We have to make sure we make something strong enough to lift the tiger up and move her back to safe ground.”

“And we need to design some way to safely carry the tiger.” added Mylo. “We can’t just pick her up by her head or tail, because that could seriously hurt her.”

The friends continued to brainstorm ideas while they ate lunch. Soon, Ms. Morales returned.

“Pack up, boys and girls. We are going to continue our tour now,” said Ms. Morales.

“Ms. Morales, can we go check on the tiger?” asked Angelina.

“Not yet. look over there,” she answered as she pointed to the entrance of the tiger enclosure.

The friends saw a sign posted on the closed gate at the entrance that read:

***Tiger Exhibit Temporarily Closed***