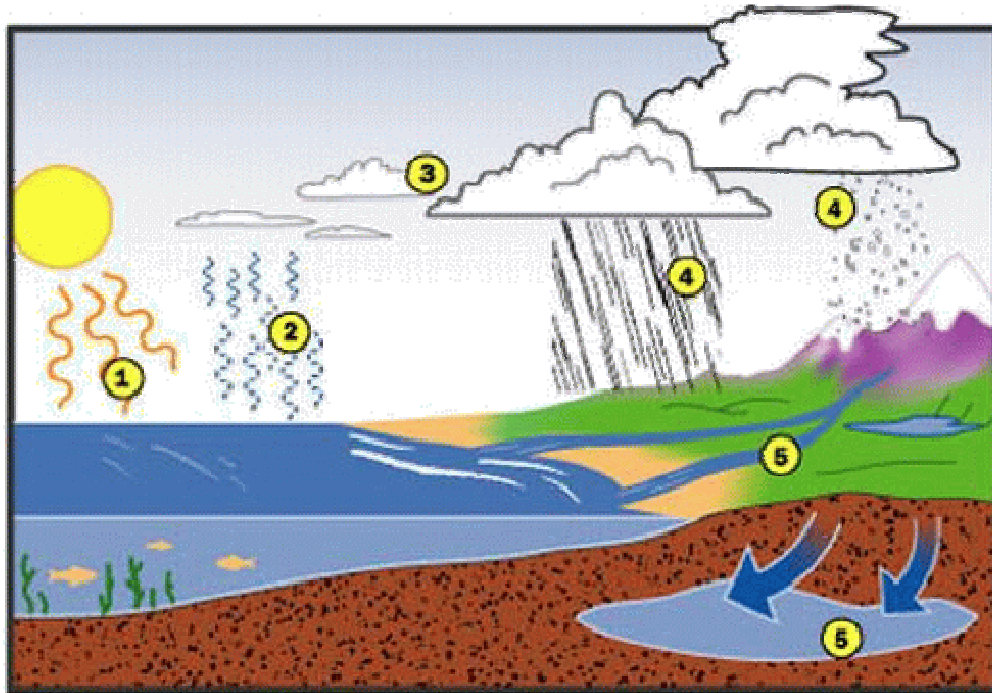


The life cycle of water at Jamberoo Action Park



First of all.... How does it all start??



- ① The sun heats the ocean.
- ② Ocean water evaporates and rises into the air.
- ③ The water vapor cools and condenses to become droplets, which form clouds.
- ④ If enough water condenses, the drops become heavy enough to fall to the ground as rain and snow.
- ⑤ Some rain collects in groundwells. The rest flows through rivers back into the ocean.

The basic water cycle for the planet Earth

FACT: **Nature does not produce ANY new water!** All the water on Earth is the same water that has been here for millions of years. You might be drinking the same water as ancient Egyptian pharaohs!

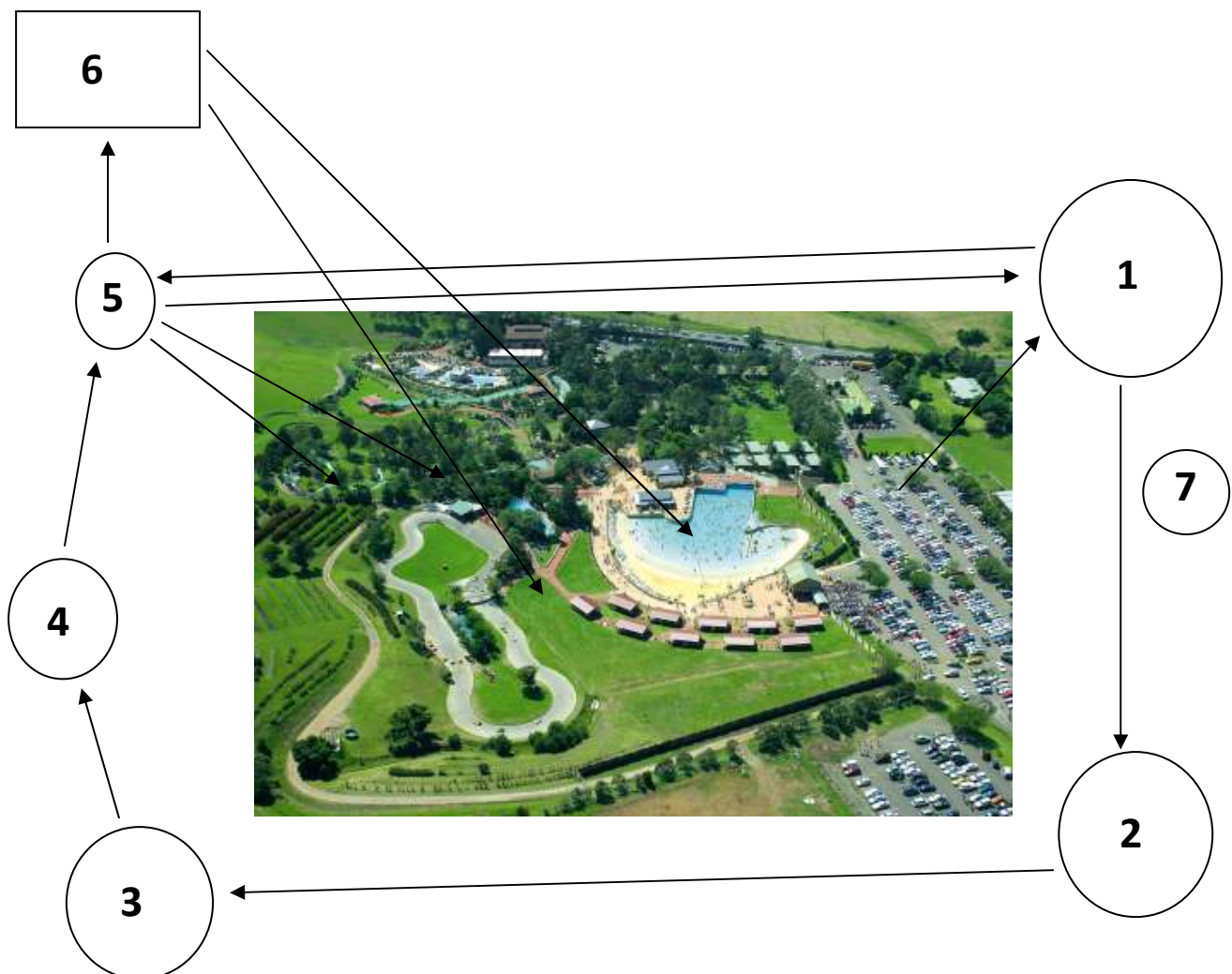
Keywords

Evaporate: When water turns from liquid into vapor

Condense: When water turns from vapor into liquid

EXERCISE 1: Fill a glass with water and place it on a windowsill. Each day, use a ruler to measure the water level in the glass. What is happening to the water?

How does the water cycle work at Jamberoo?



Wow! What does it all mean??

1: Main (primary) dam – this is where the majority of run off water is collected from our catchment area. The main catchment area for Jamberoo is its car park. The smooth flat surface creates run off which flows into this main dam

2: Second dam – Water is pumped from the primary dam into the second dam

3: Third dam – Water is pumped from the second dam into the third dam

4: Fourth dam – water is pumped from the third dam into the fourth dam

5: Fifth dam – water is pumped from the fourth dam into the fifth and final dam. Once this dam is full, the process stops with the fourth dam and so on, until all dams are full. From here, water can either be sent back to the main dam if needed, or directly into the park as untreated water for toilets and gardens.

6: Treatment plant – Here water is treated for use in the rides and hand basins/drinking water.

7: Sewerage treatment plant – Used water from toilets and hand basins goes to our sewerage treatment plant where it is treated for use as fertiliser on our gardens.

Exercise 2: Label each of the numbers on the diagram. Also label what is happening to the water at each point on the diagram and where it is being sent to.

Question 1: Where does the primary dam get its water from?

Question 2: What kind of water at Jamberoo is used untreated?

Question 3: Name 2 places at Jamberoo where water is treated and explain what the treated water is then used for:

FACT: Jamberoo Action Park does not use a single drop of water from the main water supply!

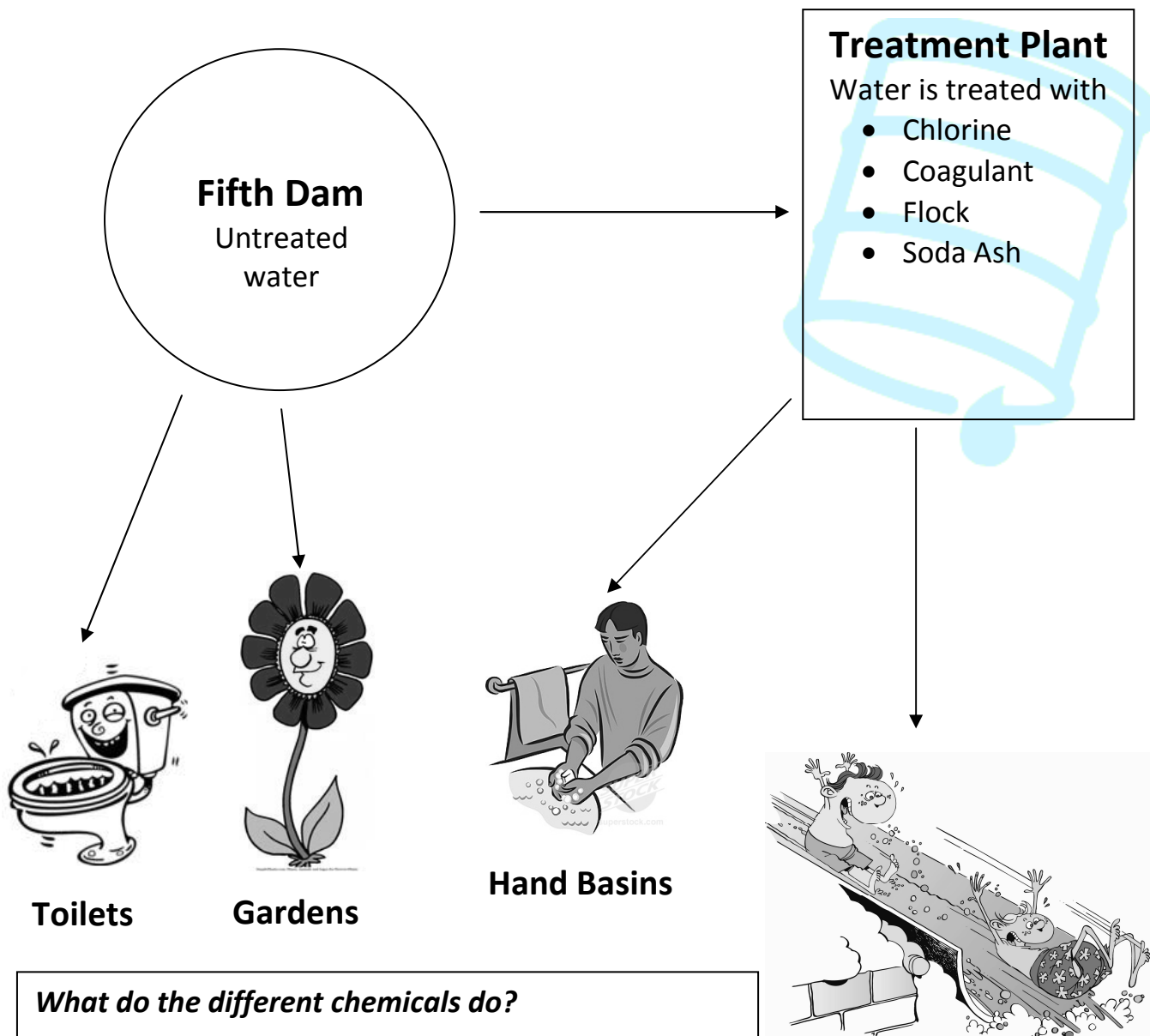
All the water you see and use at the park is collected from natural rainfall



You can see the dams from the chairlift!

Treatment Tanks

You have learned a little bit about Jamberoo's treatment tanks; now let's see what types of chemicals are used to make them work!



What do the different chemicals do?

- Chlorine – kills bacteria and germs
- Coagulant – brings small particles in the water together so they are easier to remove and filter
- Flock – makes the particles which have been brought together by the coagulant settle to the bottom, so they can be filtered out easier
- Soda Ash – Increases the PH level of the water which makes the coagulant and flock work better!
- Carbon Dioxide – brings the PH level back down again so it is suitable for swimming

**Rides & attractions –
water is further treated
with more chlorine and
Carbon Dioxide (CO₂)**

Question 4: Can you name a chemical used to treat water at Jamberoo and explain what it does?

Exercise 3: Draw a picture diagram of each of the chemicals listed and show how they are working.

FACT: Jamberoo's ride water is checked every single hour from several different locations to make sure all the chemical levels are correct. More chemicals can be added manually or by computers!

Discussion 1: How do you think climate change might affect Jamberoo?

Discussion 2: Why is recycling water important?

Water Loss

Just like in the bigger water cycle of Earth, water at Jamberoo is lost in a number of different ways.

Evaporation: This is when the sun heats the water until it turns into vapor.

How does evaporation happen at Jamberoo?

- Gardening – water on the leaves of plants and surface of the ground
- Directly from the pools and rides
- Water left on the ground when people move around the park

Ground water: Water which soaks into the ground

How does ground water loss happen at Jamberoo?

- Gardening, when water soaks into the soil
- Water from people standing on grassy areas

Transportation: This is when water is taken out of Jamberoo. This can happen just from wet towels and hair!

Luckily, Jamberoo is very careful to ensure that water loss is kept to a minimum. Some ways in which the Park reduces water loss are:

- Watering gardens early in the morning before it gets too hot
- Using lots of mulch on the gardens to hold the water for a long time
- Monitoring water levels of pools and rides carefully to make sure there is no overflow
- Quickly fixing any leaking taps, pipes or pumps

Discussion 3: Can you think of some ways you can reduce water loss at home?

Conclusion

Most of the Earth's water is in the oceans, lakes or underground. Only a small amount is the freshwater we use everyday in our homes.

Water is vital for all life on Earth so it is important we all take care Of our water and use it wisely.

While you are at Jamberoo, make sure you think about the water cycle and how it affects you. Think of ways you can help to reduce water wastage everyday so we will all have lots of water for the future and you can keep having fun at Jamberoo!