

## Preventing floods

This diagram shows some of the ways in which local changes could be very helpful in reducing the risk of flooding, and also making the environment more attractive for both people and wildlife. (The arrows show places where water could seep into the ground.)

**Q1.** A small dam could be built in the valley to make a lake. How would a lake prevent flooding?

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**Q2.** A surface parking area could be made so that water seeped through into the ground. How might this make flooding less likely?

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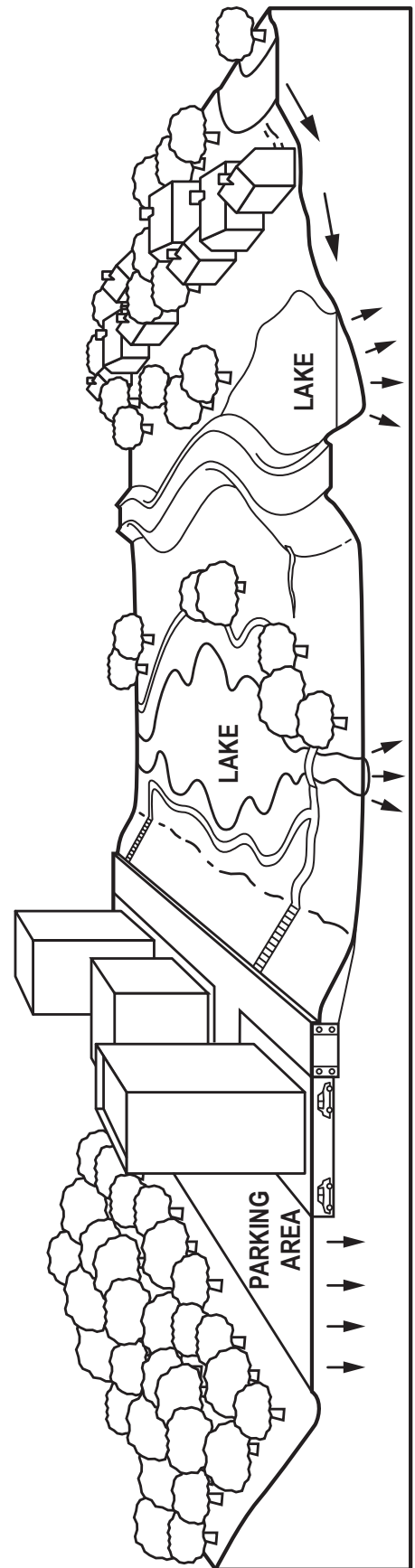
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**Q3.** Choose one other way of reducing flooding and describe how it would help.

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## Answers

**Q1. The key to all of the measures is to prevent rainwater reaching the main river at the same time. The small lake not only provides recreational opportunities, but is good for encouraging wildlife. Water flowing down the river after a storm ponds up in the lake and only flows out after the lake level has risen. Thus a short peak river flow is turned into a broad lesser flow of longer duration.**

**Q2. Parking area surfaces do not have to be impermeable, but can be built of materials that allow water to seep through. An obvious example is by using gravel as a surface instead of tarmac.**

**Q3. Levees are traditionally used to keep water confined to the river, but they can be used in reverse. If the area close to the levees is left as pasture or communal land, then the storm drainage water from local urban areas can be directed to it. It will pond up here and make a temporary lake and slowly recharge the soil.**

**In fact, soil recharging is used in most local schemes. Recharge is good for flood prevention, and it also ensures that rivers are supplied with water for longer during droughts. Indeed, it is worth mentioning to students that water lost through flooding cannot be used for supply at other times of the year. And, just as people have noticed a 50% increase in flooding due to urbanisation, they have also noted that considerably more rivers dry out in summer.**

## Resources

- ▶ Any local newspaper reports of past events.
- ▶ A bowl with soil and water stirred up. Place objects in it and then drain the water off and let everything else dry. Then try cleaning the objects.

## Background support

Floods are not only potentially life threatening to people, but they can also cause tremendous amounts of damage which cause the victims of flooding considerable hardship. It therefore makes sense to try to prevent flooding as much as possible.

In the student book, the main suggestions regarding flood prevention concern dams and reservoirs (to hold back headwater flows until the main storm waters have passed through the river system) and levees (direct earth banks alongside river channels). By contrast, this worksheet concerns some other small scale measures which can form the basis of discussion of how people can help prevent flooding through local planning and building design. Many of these are being implemented by local authorities and your local planning department could probably tell you where to find examples.