2. Rich in plants and animals

● **Birds and bird habitats**

Are there birds?

Investigate the habitats available for birds and small living things to make nests, find food, and rest in the river and along the riverside.

Observe whether there are many habitats for living things at the investigation site.

There are many water birds and bird habitats (3)

There are not many birds or habitats (2)

There are no birds or habitats (1)

2. Rich in plants and animals

● **Fish and fish habitats**
   Are there fish?

Fish habitats are closely related to the water environment. When there are various types of habitats, various types of fish can live there. Because finding a fish is not easy, try to find their habitats. Ornamental fish, such as colored carps, should be excluded from your investigation.
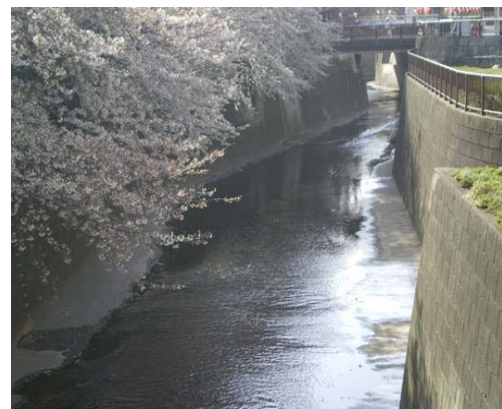
There are many fish and their habitats (3)

There are not many fish or habitats (2)

There are no fish or habitats (1)

2. Rich in plants and animals

● **Condition of the riverbed and small organisms**

  Are there living things on the bottom of the river?

The conditions of the riverbed and of small organisms living there tell us about the water quality. Observe the riverbed conditions and the types of organisms.

Sand and stones are slightly covered with algae. Insects can be found. (3)

The surfaces of stones are slimy in the presence of many algae (2)

The bottom of the river looks dark, and no algae or insects can be found (1)

3. Water clarity

To know how clear and clean the water is, let's measure the transparency and the smell of the river water. The following are three separate indicators to investigate.

- Is the water clear?
- Does the water smell?
- Is the water clean? *This is optional for those who are interested in this item.

Scale / Question	3	2	1	Reasons for your choice
- Is the water clear?	Transparency of 70 cm or more	Transparency of more than 50 cm but less than 70 cm	Transparency of less than 50 cm	
- Does the water smell?	No smell	A slight smell	A very bad smell	
- Is the water clean? (Measure COD using a simple method.)	3 mg/l or less	Between 3 mg/l and 5 mg/l	More than 5 mg/l	

3. Water clarity

- **Transparency**
  Is the water clear?

Transparency is a visual parameter indicating how clear the water is. Let's measure it using a transparency tube (clean measure). When a transparency tube is not available, you can make one using an acrylic tube. Place a water sample in a transparency tube and put it in a place where there is no direct sunlight. Move a disk, which has a double-lined cross-shaped mark, up and down and stop it when the mark on the disk appears clear. The reading of the water depth in the tube is the transparency of the water.

Scale	Transparency
3	More than 70 cm
2	More than 50 cm but less than 70 cm
1	Less than 50 cm

3. Water Clarity

- **Smell of the water**
  Does the water smell?

By investigating the smell of the water, we can identify the effect of wastewater (such as dirty industrial effluent flowing into the river). The smell of water is an index used to investigate the state of the growth/death of bacteria, algae, and microorganisms and the runoff from livestock farms, factories, and houses.

Place a water sample in a container and shake it. Bring your nose close to the container and sniff it. When it is difficult to take a water sample, stand near the riverside and sniff the air. Take a note of the smell.

Scale	Smell of the water
3	No smell
2	A slight smell
1	A very bad smell

3. Water Clarity

- **COD**

  Is the water clean?

COD (Chemical Oxygen Demand) is a parameter used to investigate the level of water pollution by organic substances. <u>This is optional and is for those who are interested in this item.</u>

COD is measured using a simple method. Follow the instructions on the COD test kit (e.g., PACKTEST, manufactured by Kyoritsu Chemical-Check Lab. Corp. or SIMPLE PACK manufactured by Sibata Scientific Technology Ltd.). Read the instructions before starting your measurements because the details of the procedures and the readings of the measured values are different for each test kit.

Scale	COD
3	Less than 3 mg/l
2	Between 3 mg/l and 5 mg/l
1	More than 5 mg/l

4. Pleasant waterfront environment

This is an observation using your physical senses to determine whether the waterfront environment is pleasant. During the observation, think about the reasons for your choice and what is necessary to improve the water environment.

- Scenery (feel)
- Trash (visual)
- Touching the water (touch)
- Smell of the riverside (smell)
- Sound along the riverside (audial)

Scale / Question	3	2	1	Reasons for your choice
- Are the river and its environment beautiful?	Beautiful	Average	Not beautiful	
- Is trash visible?	No trash	Some trash	A lot of trash	
- Do you want to touch the river water?	Yes, I want to touch it.	I don't mind touching it.	No, I don't want to touch it.	
- What do you smell along the riverside?	A pleasant smell	No specific smells	An unpleasant smell	
- What do you hear along the riverside?	The pleasant sound of the river	No specific sounds	Unpleasant sounds or noises	

4. Pleasant waterfront environment

● **Scenery (feel)**

Are the river and its environment beautiful?

Stand on the riverside and feel whether the river and its surrounding scenery are beautiful. Go to the following locations to observe the river.

- ● A place where you can observe the flow of the water
- ● A place where you can observe the other side of the river
- ● A place where you can observe the river from a higher position, for example, on a bridge
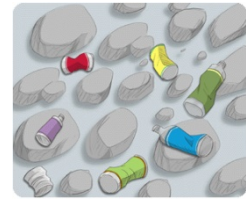
Beautiful (3)

Average (2)

Not beautiful (1)

4. Pleasant waterfront environment

- **Trash (visual)**
  Is trash visible?

Observe the amount of waste floating on the river or being dumped along the riverside and check whether the waterfront environment is visually pleasant.

No trash (3)

Some trash (2)

A lot of trash (1)

4. Pleasant waterfront environment

● **Touching the water (touch)**

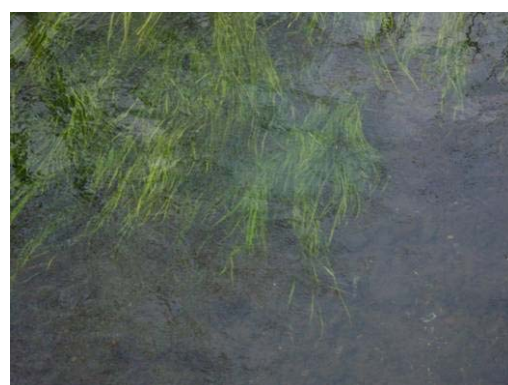 **Do you want to touch the river water?**

On hot days in the summer, we often feel like going into rivers or touching the water.

Do you want to touch the river water? Touch the water and feel whether it is pleasant.

I want to touch it. (3)

I don't mind touching it. (2)

I don't want to touch it. (1)