FOUNDATIONS OF PHYSICS

ELECTRICITY

pogo

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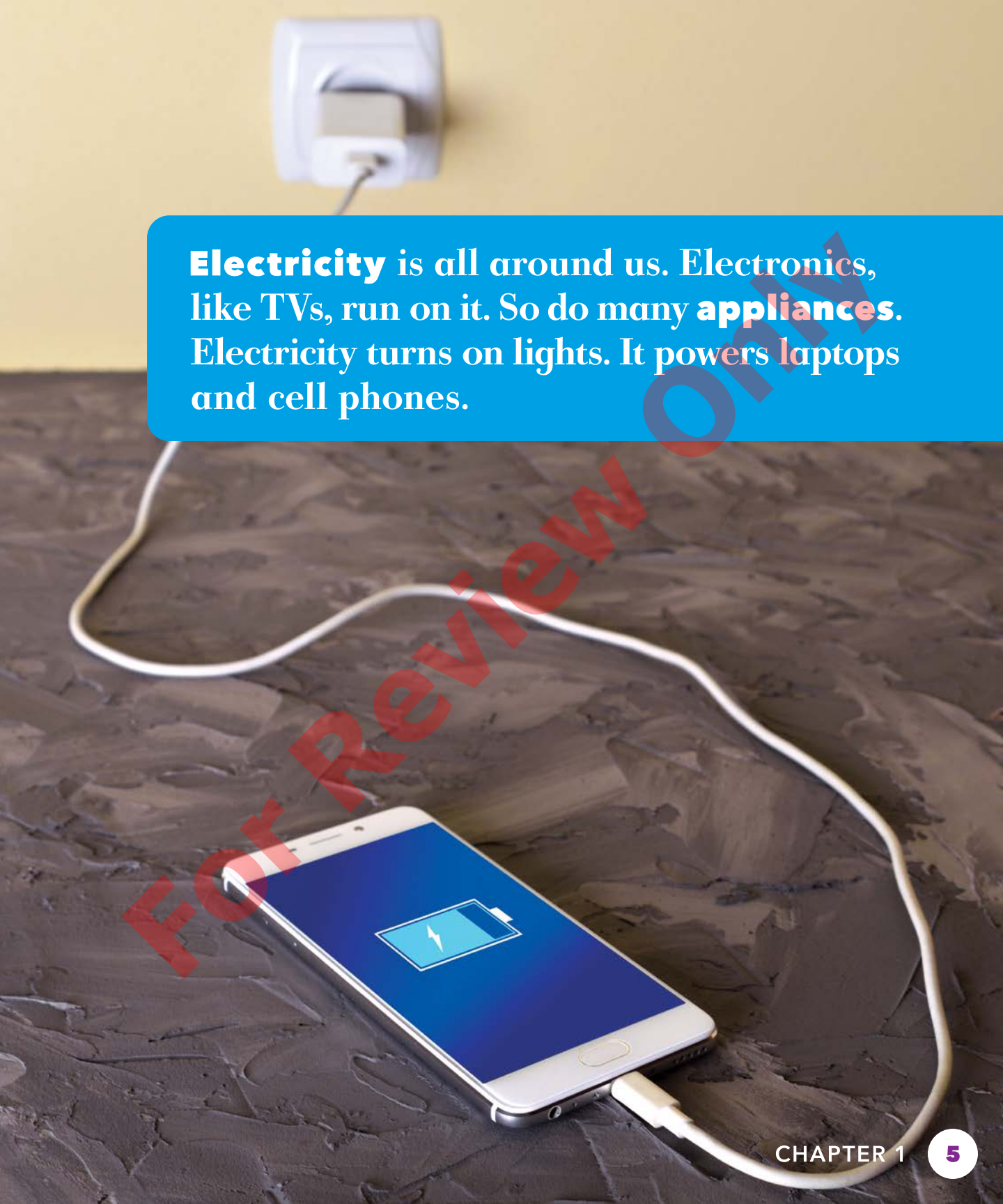
CHAPTER 1

POWER UP!

You try to turn on the TV. But it won't turn on. It is unplugged. You plug it into the wall outlet. Now the TV works!



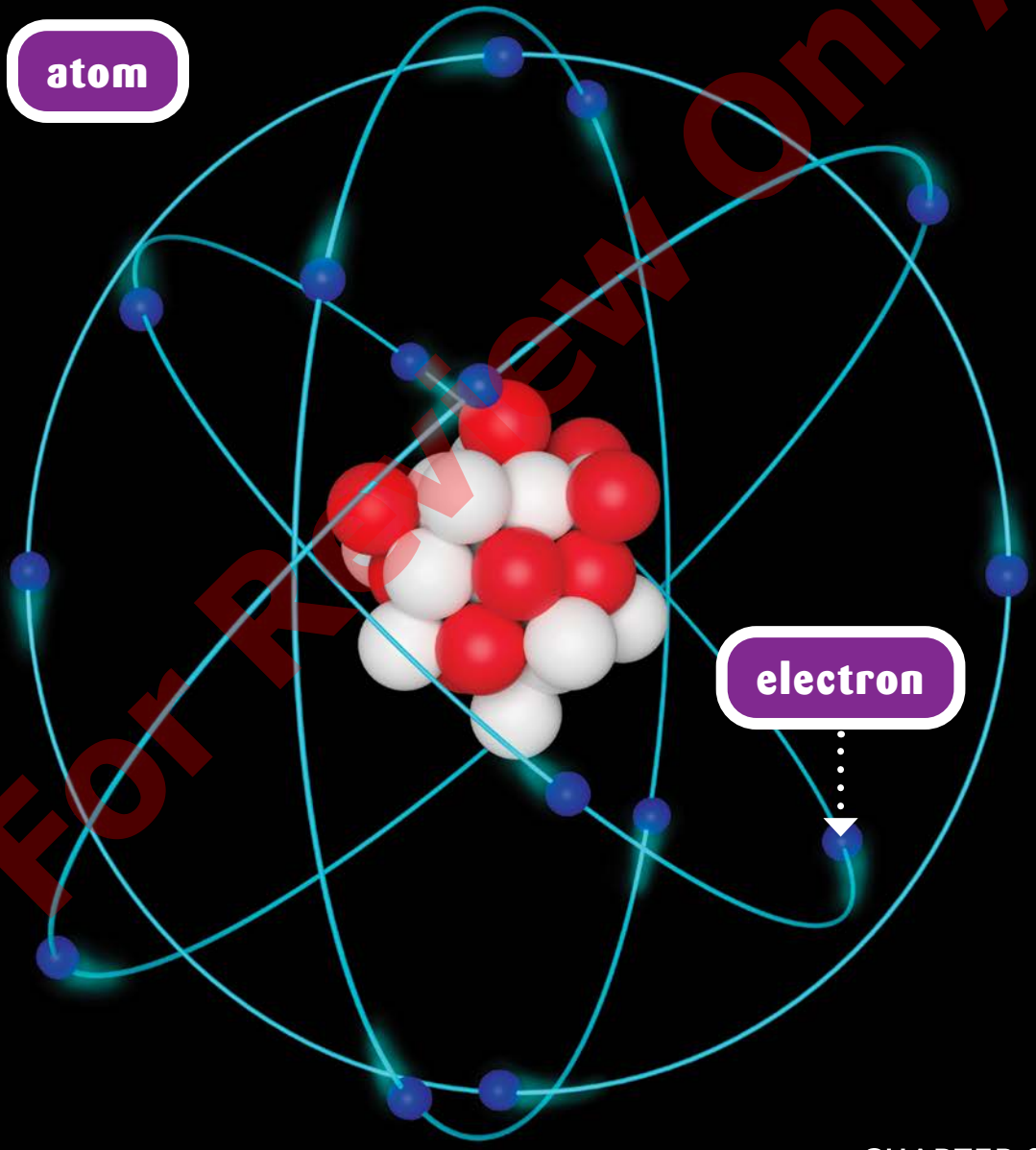
Electricity is all around us. Electronics, like TVs, run on it. So do many **appliances**. Electricity turns on lights. It powers laptops and cell phones.

CHAPTER 2

HOW DOES ELECTRICITY WORK?

We cannot see **electrons**. But we can see what they do. They turn on TVs and lights. They make electricity!

Electrons are parts of **atoms**. We cannot see them. But they make up all things. This includes you!



Each electron has a **charge**. When two things rub together, one often gives electrons to the other. Static electricity is created when objects have unbalanced charges.

Some things, like hair, give up electrons. Other things, like wool, take them. You see this when you take off your hat. Does your hair stand up? The hat took electrons from your hair!

DID YOU KNOW?

When you touch something, such as a doorknob, it might take charge from you. This can feel like a shock!

ACTIVITIES & TOOLS

TRY THIS!

MAKE STATIC ELECTRICITY

Make static electricity on your own with this activity. You will need to do this on a dry day.

What You Need:

- plastic spoon
- salt
- plate
- paper towel
- ruler
- spices
- small pieces of paper

1. **Pour one spoonful of salt onto a plate.**
2. **Rub the empty spoon with the paper towel 10 times.**
3. **Hold the spoon just above the salt. Do not let the spoon and salt touch. Does the salt jump to the spoon?**
4. **Repeat Step 2.**
5. **Now hold the spoon one inch above the salt. Does the salt jump to the spoon? Is it less salt, more, or the same amount as before?**
6. **Repeat Steps 4 and 5 a few times, raising the spoon one inch higher each time. Does less salt stick to the spoon each time? Try this until no more salt sticks.**
7. **Try this with spices or small pieces of paper. Do these stick to the spoon like the salt did? Why do you think this is?**