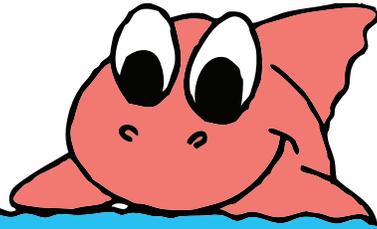


UNDERWATER LIFE

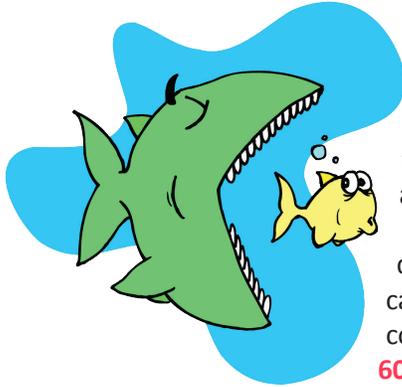


Fish come in all sizes, shapes

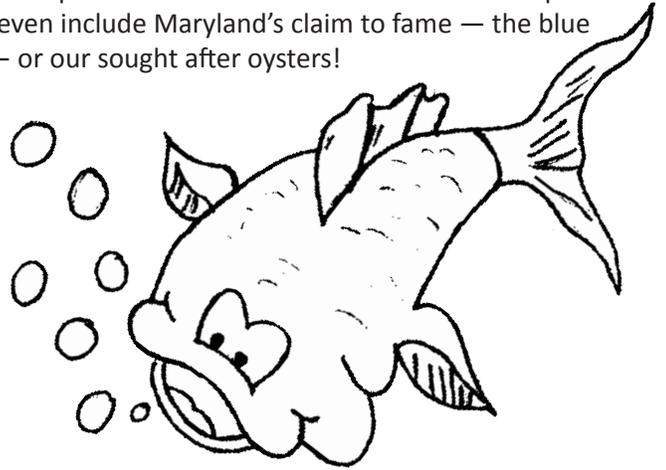
and colors, but this variety is not random. Fish live virtually anywhere there is water, whether it is a clear, fast moving stream, a quiet, weedy pond, or the open waters of the Chesapeake Bay. Some fish are predators, some are prey, and many are

both. The shape of the body, the location and shape of the fins, the location of the mouth, the color – all help determine where the fish lives, what it eats and how it protects itself.

Did you know that depending on where you cast a line in Maryland, you could catch one of more than **60 SPECIES OF FISH?** Our state



has striped bass, white perch and bluefish in the Chesapeake Bay, wild trout in the mountain streams of western Maryland, tidal largemouth bass in the Potomac River and Susquehanna Flats, summer flounder and black seabass in the coastal bays, white marlin and tuna in the Atlantic Ocean and a variety of panfish in ponds across the State. And all these species don't even include Maryland's claim to fame — the blue crab — or our sought after oysters!



SPECIES SODOKU

Fill in the empty boxes so that every row, column and 4-block square contains just one of each type of fish. (No duplicates!) Click on a fish to learn more about it.

 BROOK TROUT	1	2	 WHITE MARLIN
3	 STRIPED BASS	 SUMMER FLOUNDER	4
5	 BROOK TROUT	 WHITE MARLIN	6
 STRIPED BASS	7	8	 SUMMER FLOUNDER

Answer Key: 1. Summer Flounder; 2. Striped Bass; 3. White Marlin; 4. Brook Trout; 5. Summer Flounder; 6. Striped Bass; 7. White Marlin; 8. Brook Trout

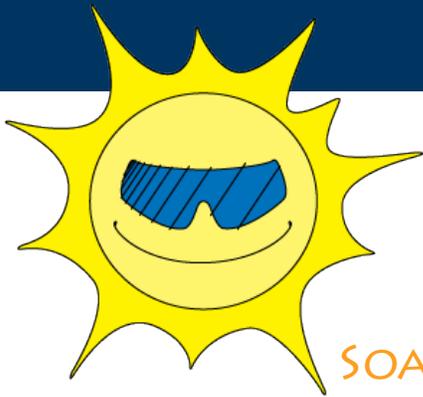
LET'S GO FISHING!

The best way to learn about aquaculture is hands-on: go fishing! Anglers 15 years and younger do not need a license to fish, year-round. Parents can join for no cost on DNR's free fishing day this month, July 4.

DNR invites young anglers to keep up-to-date on youth fishing events by joining the free **MARYLAND YOUTH FISHING CLUB**, and encourages anglers of all ages to share their photos and experiences through the **MARYLAND ANGLER'S LOG**.



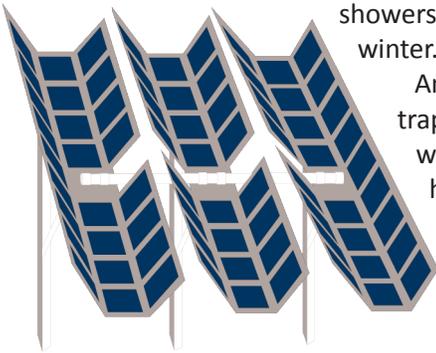
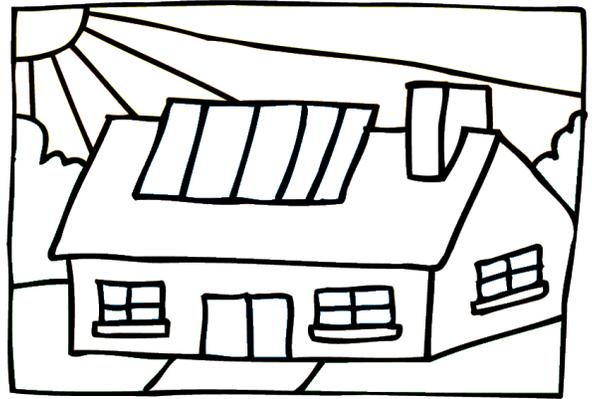
AUGUST



SOAK UP THE SUN

Solar energy is a *renewable resource*, which means it occurs naturally and can't run out from using too much of it. Powering our homes, schools and businesses with energy from the sun instead of *fossil fuels* like coal and natural gas is cleaner and safer for the environment.

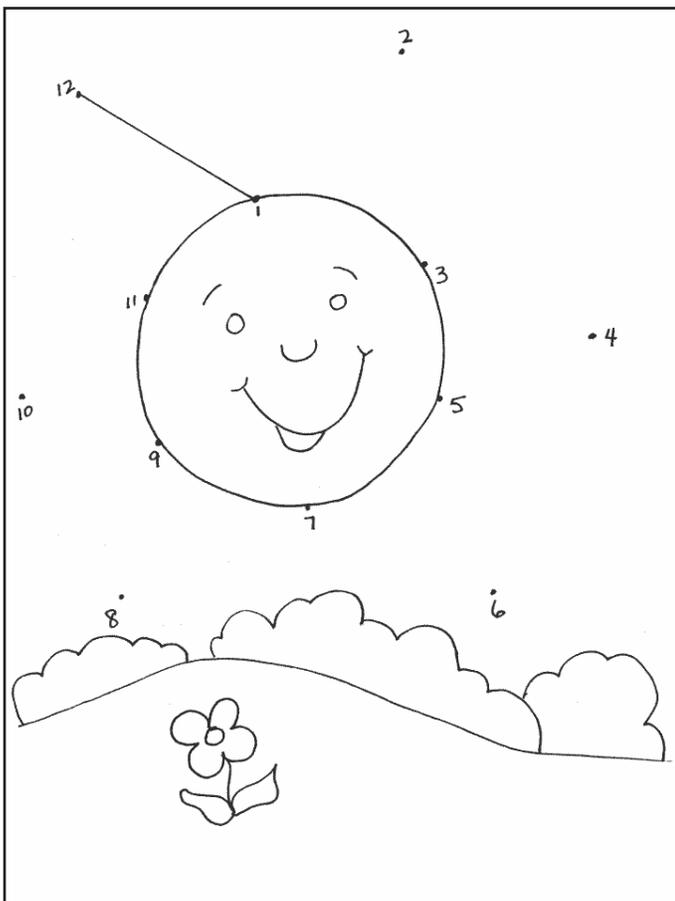
When light from the sun shines on an object, it either reflects or absorbs energy to produce heat. Solar heat can warm water for showers and keep our houses toasty in winter. It can also generate electricity.



And the best part: solar energy doesn't produce ANY pollution or *carbon dioxide*, which traps heat in the atmosphere. **TOO MUCH CARBON DIOXIDE** causes unusual temperatures, warming oceans, melting ice sheets and more extreme weather events, all making it harder for fish, wildlife, plants, and even us humans to live.

So, how does solar energy work? Which colors reflect light and which produce heat? Find out by completing the activity below!

CONNECT THE DOTS!



SOLAR ENERGY ICE CUBES

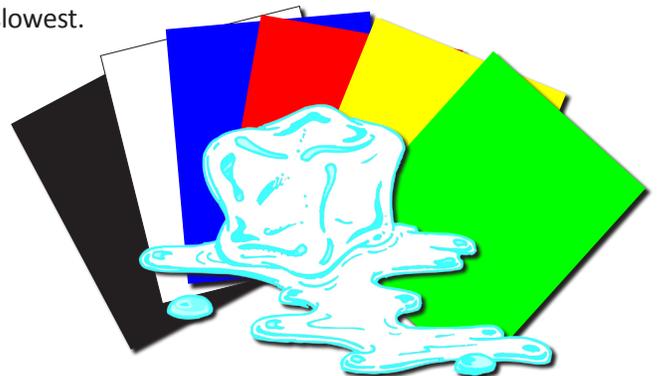
If you've ever seen solar panels, you've probably noticed they're usually dark blue. That's because darker colors absorb more light. Try this fun experiment with construction paper to see how different colors affect the melting rate of ice cubes.

What you'll need:

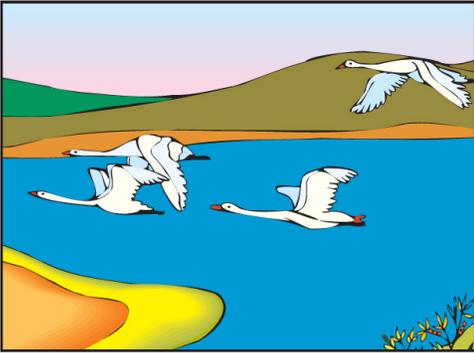
- Pieces of black, white, blue, red, yellow and green construction paper
- 6 ice cubes of the same shape and size

What you'll do:

Put one ice cube on each piece of paper and place them in the sun. Make sure all cubes are exposed to full sunlight. Observe which one melts the fastest, and which the slowest.



SEPTEMBER



UP, UP & AWAY

Can you imagine moving to a different house for every summer and winter? Some birds do. They are called **MIGRATORY BIRDS**.

Why would they leave their cozy nests and fly thousands of miles away? To follow their food source! In the fall, insects die or hibernate, so bug-eating birds must move south. Most birds of prey move south too since small rodents are hunkering down for the winter.

In the spring, birds move from their wintering grounds to their summer grounds for the breeding season because they need to find a place to raise their young. There is too much competition for living space in their winter grounds.

MAKE YOUR OWN BIRD FEEDER

More than **400 DIFFERENT TYPES OF BIRDS** call Maryland home. While some live here all year long and some just pass through seasonally, you can see them and enjoy their presence in your own backyard. (Don't worry if they don't show up right away — it may take a few days for them to find this new food source.)

What you'll need:

- A clean 2-liter bottle with lid
- Eye screw
- Wooden spoon
- Bird seed
- X-acto knife
- String or wire

What you'll do:

- Screw the eye screw onto the outside of the lid.
- Use the X-acto knife to make X-shaped slits on one side of the bottle.
- On the opposite side, cut out a small circle.
- Insert the spoon handle in through the circle and out through the X. The spoon should remain outside.
- Tie a string through the eyehook to make a circle.
- Add bird seed to the bottom.
- Put the lid back on and hang from a post or tree limb.
- Empty and wash weekly.



COLOR!

Check out all the creatures visiting this back yard! After you print out and color in this picture, search your own yard or local park with some friends or family members and see how many birds you can find!



OCTOBER



FALL LEAVES FALL

Come fall in Maryland, **LEAVES CHANGE** from green to gorgeous shades of red, orange, yellow and brown. After the colorful show, the leaves fall. The tree stands bare until the arrival of spring.

WHY DOES THIS HAPPEN? It has to do with a plant's food and the time of year. Plants make their own food using sunlight and *chlorophyll* — the chemical that makes leaves green. Fewer hours of sunlight in the fall tells the trees that winter is coming and they can stop making so much food. The chlorophyll then breaks down and reveals the reds, yellows and oranges typically hidden by green. In the mean time, cells grow over spots where the leaves are attached in order to save water. Once the water is gone, the leaves dry out and fall to the ground.



CAN YOU TELL A TREE FROM ITS LEAF COLOR?

Use this guide to identify different **TREE SPECIES** around your neighborhood!

Oaks reddish brown

Hickories golden bronze

Dogwood purplish red

Birch bright yellow

Maple trees show a whole range of colors...

Sugar Maple orange-red

Black Maple glowing yellow

Red Maple bright scarlet

WORD SCRAMBLE

Help! Key words from this month's game have gotten scrambled. Rearrange the 10 groups of letters to the right to spell them correctly!

- wogodod _____
- evarnicb _____
- aempl _____
- ceepsis _____
- nuatum _____
- crhbi _____
- fluocro _____
- vsaele _____
- lyhclropol _____
- yhcikro _____



NOVEMBER

A WILD WORLD

MANY ANIMALS hibernate, or become inactive and sleep during the cold days of winter. Some wake for short amounts of time while others sleep through the entire season.

As temperatures begin to get colder, hibernating animals — like bears, squirrels, groundhogs, raccoons, skunks, opossums, dormice and bats — prepare nests. Starting in the summer and fall, many animals eat to gain weight. (A black bear can gain up to 30 pounds per week during its pre-hibernation period!) The extra fat keeps them alive during the winter. Some animals store spare food nearby. For example, **SQUIRRELS** bury nuts and acorns to eat when they wake up.

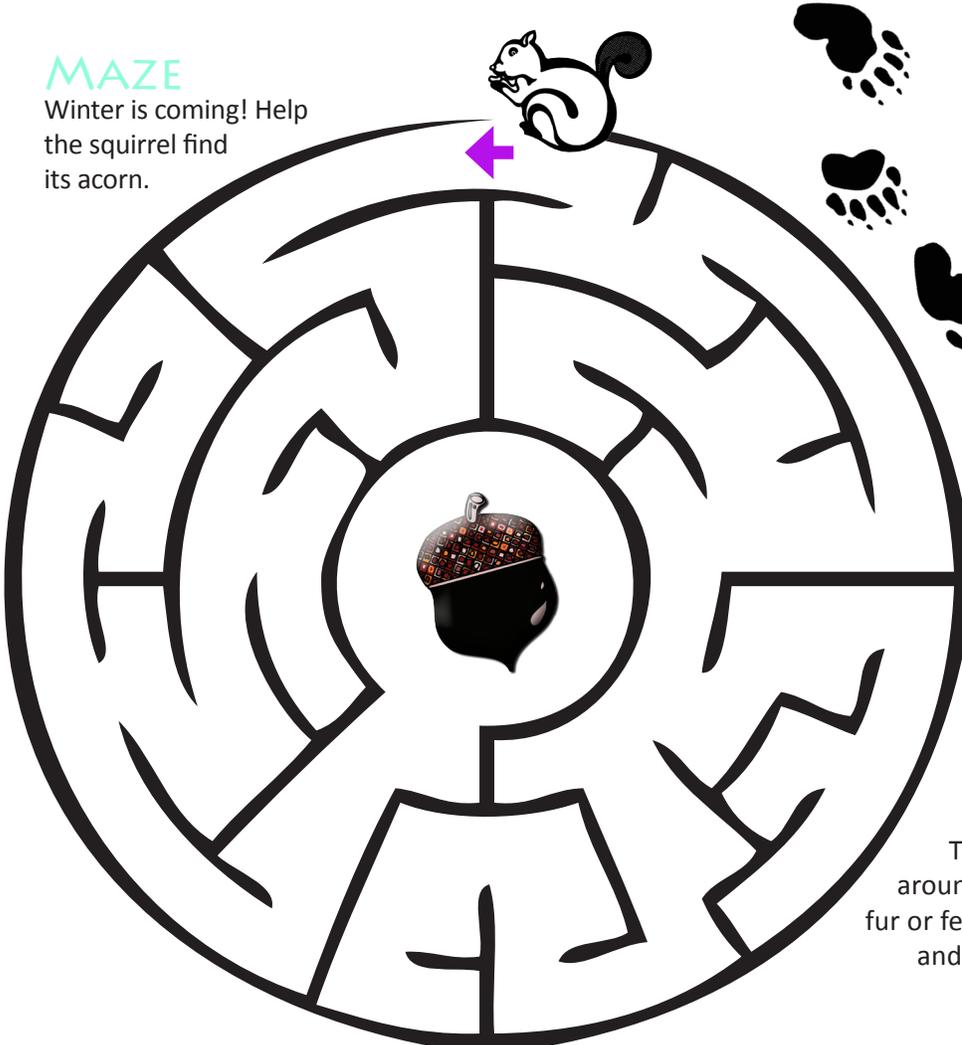
Frogs, toads, turtles, lizards, snakes, snail, fish, shrimp and even some insects hibernate too.

Did you know? Some female **BEARS** (sows) give birth while hibernating! The cubs nurse and grow until the sow wakes up, at which point they all begin to search for food. The cubs stay with their very protective mother for about two years.



MAZE

Winter is coming! Help the squirrel find its acorn.



SEARCH FOR ANIMAL PRINTS!

The next time you're in a forested area, look around for signs of wildlife like tracks, droppings, fur or feathers. Don't touch them, but take a camera and a notebook to record what you find!



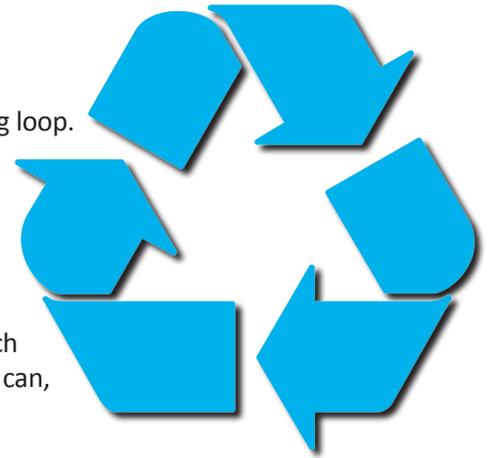
DECEMBER

REDUCE, REUSE, RECYCLE

Have you ever seen this three-arrow symbol before? It's called the *Mobios*, or recycling loop.

The arrows stand for the steps of the **RECYCLING PROCESS**:

1. You collecting recyclable materials and sending them to a recycling center
2. Factories making them into new products
3. You buying products made from recycled materials



Recycling, or making new items from old ones, requires a lot less money and energy, and saves a lot of our natural resources. This practice also saves space in landfills, which can (and do) fill up quickly with other trash. Before you toss anything into the garbage can, consider the three R's...

REDUCE *Can I cut back on how many new products I use?*

Use a reusable water bottle and shopping bags instead of plastic ones.

REUSE *Can I use this item for something else?* Use an old t-shirt as a rag instead of throwing it away.

RECYCLE *Is this recyclable?*

Toss paper, cans and plastic in recycling bins instead of the regular trash. Most devices, batteries and ink cartridges can be recycled too! Just check with your local electronics store.

MAKE YOUR OWN WIND CHIMES! (WITH AN ADULT)

What you'll need:

- Hammer
- 1 Nail
- Acrylic paint
- Paint brush
- 5 tin cans
- Washers
- Yarn or string

What you'll do:

- Rinse out and dry the cans.
- Paint and decorate them.
- Cut a small hole in the bottom of each one.
- Run yarn through two washers inside the cans, and knot the ends. (One washer should hold the yarn in place, the other one makes a satisfying clanking sound when it hits the can.)
- Hang the cans at different lengths from a porch or branch.



MATCHING

Be a recycling super hero! Which items belong in the recycling bin? Which go in the trash? Can any be reused? Match the item to the appropriate action!

STYROFOAM CUPS OR CONTAINERS

READ MAGAZINES

SODA CANS OR BOTTLES

CARDBOARD

FOOD WRAPPERS

BOTTLE LIDS

