Keep *Cool*

Activity Packet

CITY OF IOWA CITY
UNESCO CITY OF LITERATURE

IOWA CITY CLIMATE ACTION MATTERS

GREEN IOWA

Heat Rises. Iowa City Responds.

Iowa City and Cedar Rapids partner to map heat inequities

In July 2023, residents in Iowa City and Cedar Rapids served as citizen scientists to gather temperate data in our area. Extreme heat is detrimental to public health since it impacts the most vulnerable disproportionately.

Defeat the Heat

Preparing for rising temperatures and more frequent extreme weather is more important than ever before. But preparedness is just one of many good reasons to plant more trees, weatherize homes, and get to know neighbors. These actions also help build a more livable, thriving community, both now and into the future.

Keep Cool IC

Climate Change is bringing higher summer temperatures to our area that happen more often and last longer, even into the night. Have a plan to help yourself and others keep cool this summer.

When high temperatures hit, learn how to stay cool. It you are outside, take breaks in the shade, where it can be up to 20 degrees cooler than in direct sunlight.

Heat related illness is preventable. **Learn the signs of excessive heat exposure and the appropriate responses.** Check on heat-vulnerable people around you.

In extreme temperatures above 90 degrees, know where to go to cool off. **Cooling centers are available throughout Iowa City.**

Cooling center info: **www.iowa-city.org/KeepCool**
For more information heat safety visit **www.heat.gov**

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EVERYTHING ABOUT

HEAT ISLANDS

Heat islands are areas in cities where temperatures can be up to 20° F hotter than nearby neighborhoods.

WHAT CAUSES THEM?

FEWER NATURAL LANDSCAPES

Vegetation, trees, and bodies of water help naturally cool their surroundings. Trees provide shade and plant leaves "breathe" out water vapor. As moisture evaporates from ponds, lakes, and streams, that also has a cooling effect.

CITY PLANNING AND MATERIALS

Human-made construction materials such as concrete, pavement, and roofing materials also absorb and radiate more heat than natural vegetation. This heat can build throughout the day causing warmer temperatures at night.

HEAT GENERATED BY HUMAN ACTIVITY

Cars, air-conditioning, and buildings all produce extra heat that is added to the environment. This is called anthropogenic heat waste, meaning it is produced by human activity.

WHAT ARE THE IMPACTS?

- Higher energy usage
- Increase in greenhouse gas emissions
- More air pollutants
- Higher risk for heat related illness

WHAT CAN PEOPLE DO TO HELP?

INCREASE TREES AND VEGETATION

In addition to provide shade and cooling the air, trees and vegetation can also reduce stormwater runoff and protect against erosion.

USE BETTER BUILDING MATERIALS

Using light rather than dark colored materials on rooftops reflects sunlight away from a building. Pavement for sidewalks, streets, and parking lots can also be made using using materials that reflect rather than absorb heat and enhance water evaporation.

GO GREEN ON THE ROOF

Some roofs can support shrubs, grasses, or even trees to provide additional cooling.

For more information visit www.epa.gov/heatislands

Stay safe in the heat!

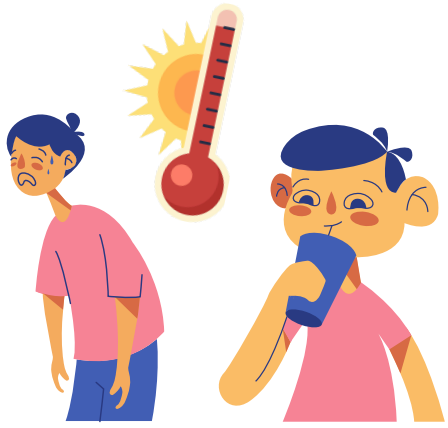
Heat Illnesses

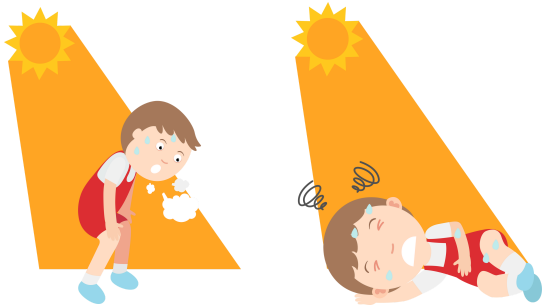
If someone can't cool down quickly enough, they can get **heat exhaustion**.

They might feel:

- Muscle cramps
- Dizziness or weakness
- Headache
- Nausea and vomiting

If you have these symptoms, move to a cooler place, put your feet up, and drink water.





Heat stroke is very serious and can be fatal unless treated immediately. Watch for:

- Extreme high temperature
- Red, hot, and dry skin
- Rapid, strong heartbeat
- Mental confusion and unconsciousness

If someone has the symptoms of heat stroke, call 911! Move the person to a cooler place immediately.

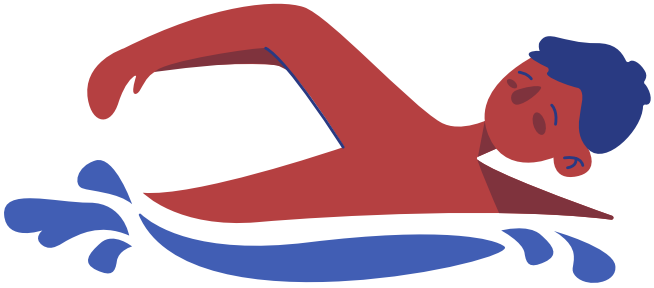
Some people are at greater risk for heart problems, stroke, and kidney failure when it's hot. Age, working outside, health conditions, and certain medications can make people more sensitive to heat.

Stay safe!

Check in on people who are more vulnerable to the heat. Children can get heat exhaustion from being especially active and forgetting to drink water. Remember to drink water, stay in the shade on hot days, and take frequent breaks.

How to cool down

Drink water and other fluids often - do not wait until you are thirsty. Eat foods with a lot of water. Play in fountains, sprinklers, pools, and stay in the shade. Try to go to a cooling center on hot days if you don't have a way to cool down at home.



TOP 5 WAYS TO BEAT THE HEAT

With the rise of longer and hotter summers, it's important to be prepared! The following tips can help you stay cool while enjoying the summer sun.

1	**Stay Hydrated**	Make sure to stay hydrated on hot days! The body loses more water on hot days by sweating to keep your body cool.
2	**Stay in the Shade**	Being in the sun all day can make a hot day even hotter. Take breaks to sit in the shade and cool down.
3	**Keep Cool in the Pool**	Spending time in the pool, lake, or even sprinkler is a great way to keep cool. Just make sure to apply sunscreen before and after to avoid sunburns.
4	**Dress Light**	Wearing light colors can help reflect heat. You should also wear loose clothes to allow for more air circulation
5	**Find the Breeze**	Whether it's in front of a fan or in the air conditioning, it's important to find places to keep cool during the hottest points of the day.

Cooling Centers of Iowa City

- Robert A. Lee Recreation Center (220 S. Gilbert St.)
- Mercer Aquatic Center/Scanlon Gym (2701 Bradford Dr.)
- Iowa City Public Library (123 S. Lynn St.)
- Senior Center (28 S. Linn St.)
- City Pools
- Splash and Spray Pads

For more information about pools and splash pads visit **www.icgov.org/pools**

Summer Word Search

Can you find all the key words and phrases from your activity guide?

L	R	T	S	S	R	S	N	R	T	A	O	H	A
S	D	U	T	I	U	E	O	T	S	E	S	E	H
R	A	E	R	M	T	N	E	R	L	R	O	A	S
N	O	I	T	A	R	D	Y	H	E	A	U	T	P
U	I	N	N	T	L	R	L	T	H	O	R	S	O
T	R	T	R	R	R	S	E	H	D	E	E	T	T
U	T	D	R	I	E	M	A	R	M	U	Y	R	T
H	H	T	I	H	O	D	D	M	A	R	H	E	H
U	S	M	S	M	M	R	U	Y	E	T	T	S	E
T	A	O	R	N	E	S	R	D	T	S	R	S	H
O	T	E	L	T	E	O	A	A	R	S	T	T	O
O	H	A	M	A	S	L	I	O	H	O	E	R	T
T	S	E	O	O	R	R	S	M	I	M	A	L	A
O	I	A	M	T	R	A	D	I	A	T	I	O	N

Word Bank

Radiation	Solar	Heat Stress
Summer	Hydration	Sun
Thermometer	Rural	Spot the Hot

Heat & Climate Change

The calendars on the op show the number of days in Iowa with temperatures of 90°F in 2021.
Iowa City is projected to have over 90 days with temperatures over 90°F by 2100.

Color in the calendars on the bottom to reflect 92 total days over 90°F.

June 2021

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July 2021

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August 2021

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June 2100

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July 2100

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August 2100

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

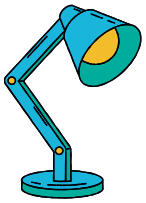
Heat Transfer

Conduction is the transfer of thermal energy through direct contact.

Convection is the transfer of heat by the movement of a liquid or gas.

Radiation is a process where heat waves are emitted that may be absorbed, reflected, or transmitted through a colder body.

Choose whether each situation shows conduction, convection, or radiation.

	You feel the warmth of the fireplace even if you are sitting on the sofa.	
	You feel hot after reading for a long time under a lamp that does not have a LED bulb.	
	A spoon becomes warmer when placed in a bowl of hot soup.	
	You heat food in a microwave oven.	
	A hot air balloon rises.	
	Water boils on a stove.	

Heat Island Solutions!

Now that you have learned about heat and urban heat islands, what are some possible solutions? How can you beat the heat?
Draw your solution(s) to the urban heat island problem below!

Resources

www.icgov.org/KeepCool

www.ready.gov/heat

www.211iowa.org

www.weather.gov/dmx/preparedness

www.cdc.gov/nceh/features/extremeheat/index.html

https://uihc.org/health-topics/heat-illness

https://riskfactor.com

www.icgov.org/pools