WICHITA THUNDER

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TOYOTA

NOVEMBER 12, 2025

EDUCATIONAL GAME DAY BOOKLET

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Hello Kids!

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General Manager

Welcome to the 2025 T-Dog Hockey Academy!

Today T-Dog is going to teach you all about hockey and the importance of a good education.

As you watch the game, you will see how hockey relates to almost every subject you are studying in school.

Follow along and complete the activies in this workbook. Get ready for fun, learning and hockey!

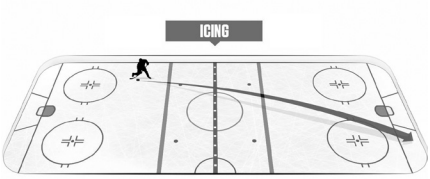
HOCKEY 101

PENALTIES

A punishment for breaking the rules. can be Minor (2 minutes), Major (5 minutes) or Misconduct (vary in time).

POWER PLAYS & PENALTY KILLS

When one team has more players on the ice than the other side because a player is serving time in the penalty box. Conversely, the team with fewer players is on the Penalty Kill.



ICING THE PUCK

When a player shoots the puck across the center red line and past the opposing red goal line. The opposing team must be the first to the puck!

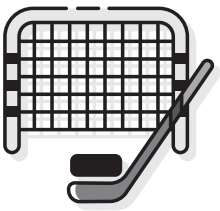
OVERTIME

Any regular season game that ends regulation with a tie score goes into a seven minute sudden-death overtime period. If at the end of that overtime period the game remains tied, the game goes into a shootout. During the playoffs, there are no shootouts and sudden-death overtime periods are 20 minutes in length.

OFFSIDE

A team is Offside when any member of the attacking team precedes the puck over the defending team's blue line. The position of the player's skate, not that of his stick, is the determining factor.

SHOOTOUTS



Any regular season game that ends overtime play with a tie score goes into a shootout. A shootout is a series of penalty shots in which each team is allowed three attempts to score in an alternating fashion. If after three attempts the teams remain tied, the shootout will continue to alternate shots until one team fails to match the effort of the other.

SHOT ON GOAL

A Shot on Goal is a shot that will enter the goal if it is not stopped by the goaltender. A shot on goal must result in either a goal or a save.

Hockey Science

USE THESE FUN FACTS TO ANSWER THE QUESTIONS BELOW.

Throughout a game, players can lose up to eight pounds of body weight! The weight loss is due to sweating, and it is crucial to stay hydrated during the game to prevent injuries.

The temperature of the ice during a game is 24 Fahrenheit (F) or -5 Celsius (C). Water has a freezing point of 32 (F); O (C)

Goalie masks are made out of Kevlar, the same material used in bullet proof vests that protect soldiers and police officers.

New materials for hockey sticks include aluminum and carbon-graphite, which generally weigh less than wooden sticks. Some Slap Shots have been shown to reach speeds of 108mph!

1. **WHAT IS THE TEMPERATURE OF THE ICE DURING A HOCKEY GAME?**

2. **HOW MUCH WEIGHT CAN A PLAYER LOSE DURING A GAME? WHAT CAUSES THE WEIGHT LOSS PLAYERS EXPERIENCE DURING THE GAME?**

3. **UP TO WHAT SPEED DO SOME PUCKS TRAVEL FROM A PLAYER'S SHOT?**

4. **GOALIE MASKS ARE MADE OF WHAT MATERIAL?**

Science Friction

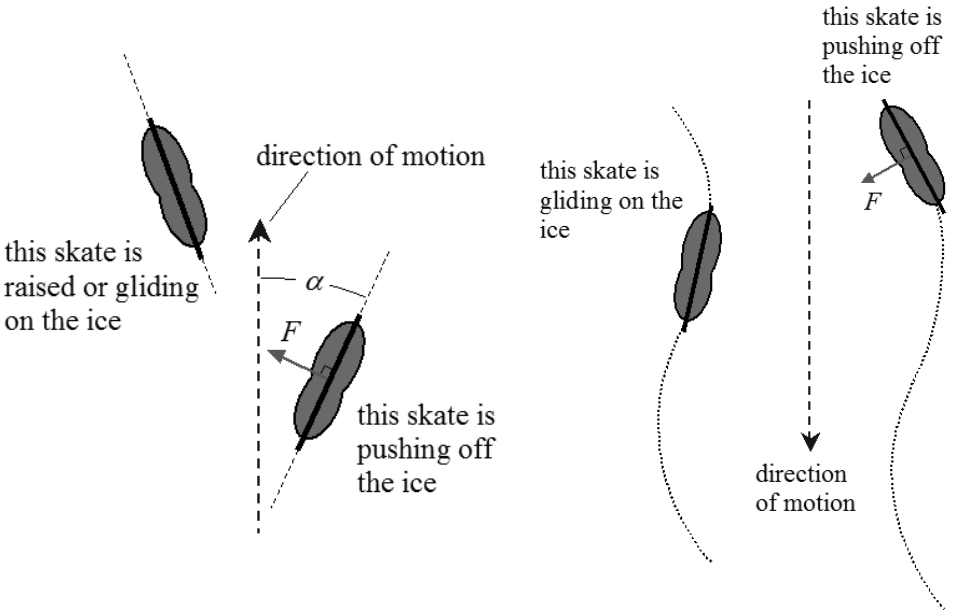
PHYSICS OF HOCKEY – SKATING

Friction is a force objects have, which makes them resist motion or movement across or against another. Friction is what happens when two objects rub against each other; like two hands rubbing together or air slowing down a car.

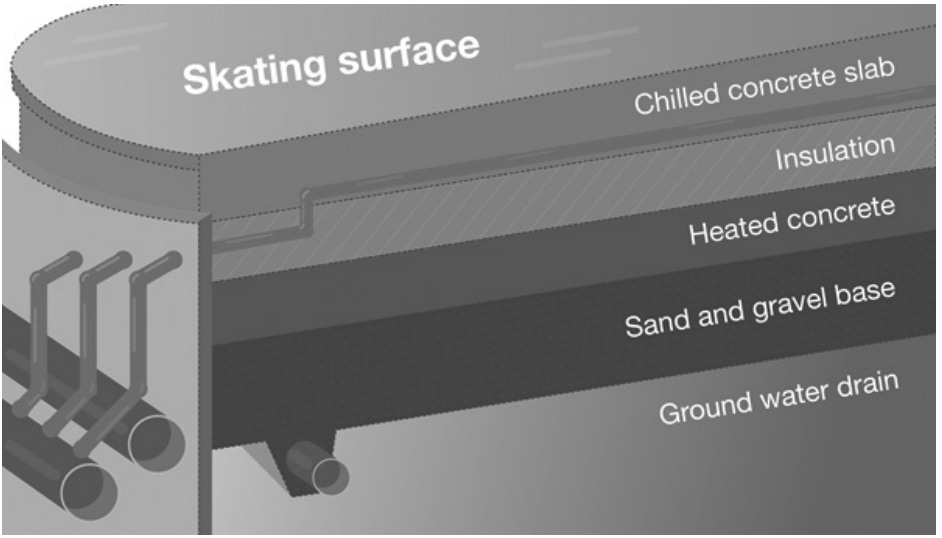
There are two main types of Friction: Static Friction and Sliding Friction.

Static Friction is a friction force that opposes any attempt to move a stationary object along a surface. An example would be the tires of a car parked on a hill.

Sliding Friction is Friction where a force opposes the sliding motion of two surfaces rubbing together. Riding a bike on the sidewalk would be an example of sliding Friction.



How Ice is Made



STEP 1

To begin creating ice for the rink, you must start with a sand or concrete base with a layer of pipes buried underneath. Those pipes help cool the base and keep the water on the ice frozen.

STEP 2

A thin layer of water is sprayed on top of the cold pipes by a Zamboni. This first layer of water seals the layer of concrete or sand and allows for a level surface to be created.

STEP 3

Next, the ice is painted to show the markings required in hockey. The red and blue lines, the goal crease and face off circles are painted on top of the surface.

STEP 4

Once the painting is finished, another layer of water is sprayed on top of this to thicken the ice. A finished ice surface is only 1 inch thick.

Equipment & Gear

While at times the Thunder seems invincible, it does not mean that they do not get injured during games. It is vital for them to wear all of their equipment so they can stay healthy and keep playing their best.

When it comes to skaters and goaltenders, they all have the same goal of winning. Where their duties and jobs are different, starts with what they wear to protect themselves from injury.

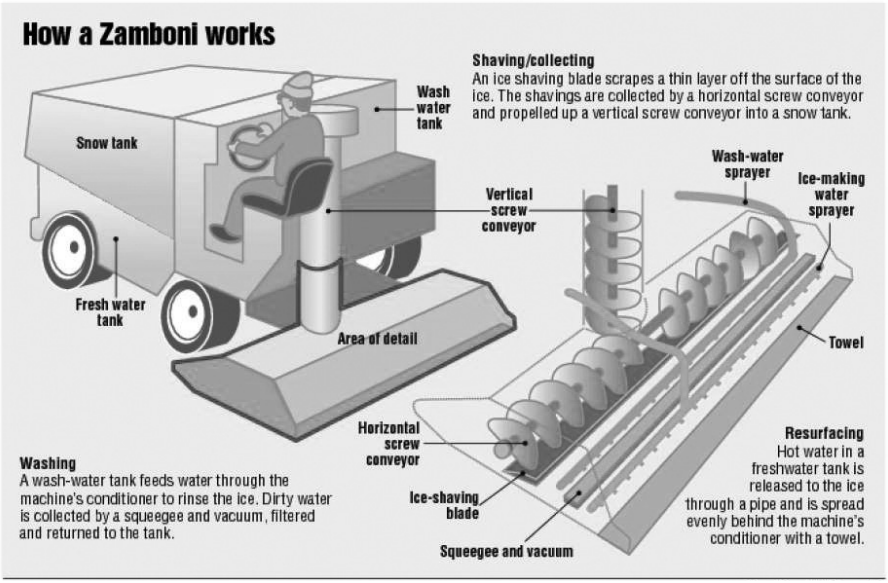
Goalies wear extra equipment that covers more of their body to stop the pucks from hurting them. They are not able to move around as quickly as the skaters but being safe is what is really important.

Not very many people enjoy going to the dentist, so to avoid this, wearing a mouth guard is of great importance.

Science of the Ice Surface

WHAT ARE ZAMBONI?

In 1949, Frank J, Zamboni developed a machine that is used to clean the snow off of an ice surface. This device, known as a 'Zamboni; produces a clean, smooth sheet of ice for hockey players and ice skaters to perform on.



HOW DOES IT WORK?

Behind the rear wheels of the device, hidden from plain sight, is a large device called a 'conditioner; which holds the most important features of the Zamboni. There is one large, sharp blade which is as wide as the machine that shaves the top layer of the ice surface.

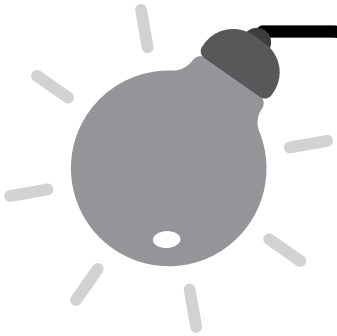
The shavings that the blade creates are then swept away by an 'auger; which is a large, horizontal, rotating screw that is located just above the blade. From the center of the horizontal auger, the shavings then spin up a vertical auger. Once the shavings reach the top, they are thrown into the bucket, which is the large box on the front of the Zamboni.

While the shavings are being picked up by the auger, water is sprayed on the ice from one of two water tanks. One tank sprays water onto the surface to 'wash' the ice and remove any dirt and debris. A rubber squeegee then removes the dirty wash water.

For the final step, hot water is pumped onto the ice from the second water tank to soften the ice and fill in the deep cuts in the ice. This water is extremely hot, typically between 140 and 160 degrees (F). The smoother the ice surface, the faster the players can skate. The puck also travels faster on a smooth sheet of ice.

Science of the Ice Surface

Fun Facts



At approximately 3/4 of a mile per resurfacing, if there are four resurfacings per game, the machines travel an average of three miles during each game.

In 2001, a Zamboni was sharp enough to slice through thick stacks of newsprint!

Approximately 3,661 snow cones can be made from the shavings produced in one resurfacing.
When the machine resurfaces the ice, it is capable of removing close to 2500lbs of compacted snow.

On average, a Zamboni "travels" close to 2000 miles each year.

REVIEW

1. From reading the text, why is it important that the water is kept at extremely high temperatures?

2. Using the context clues, why is it necessary for the auger to shave or scrape the top layer of the ice off while resurfacing?

3. How many miles does the Zamboni travel during a single game?

Running the Numbers

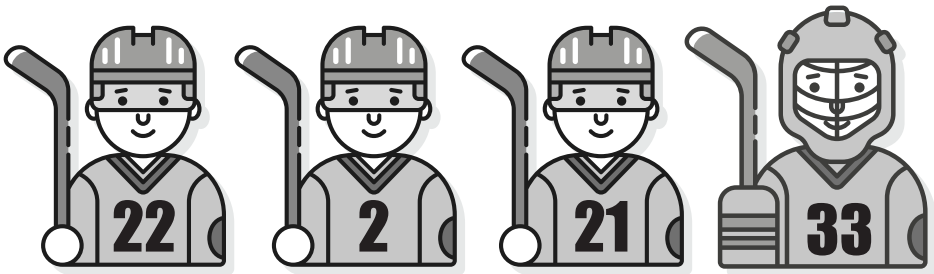
Teachers, using the game box score, answer these questions with your students.

1. How many shots on goal were taken by each team?
   How many goals were scored?

Wichita Thunder	Kansas City Mavericks
Shots:	Shots:
Goals:	Goals:

2. What was each goalie's save percentage? (Saves/Shots of goal)

3. How many penalty minutes did the Thunder serve?



Michal Stinil | Nico Somerville | Jay Dickman | Matt Davis

1. Nico Somerville – Michal Stinil =

2. Jay Dickman + Matt Davis =

3. Jay Dickman divided by Nico Someville =

4. Michal Stinil X Matt Davis =

Equipment Challenge

PRICING CHART	
PAIR OF GLOVES	$95.00
PAIR OF ELBOW PADS	$95.00
HOCKEY PANTS	$125.00
PAIR OF SKATES	$430.00
HOCKEY STICK	$110.00

Use the chart above

1. What is the total cost to buy all of the equipment?

2. How much would 10 sticks cost?

3. If a player needed 2 sets of pants, how much would it cost?

4. On average, players use 4 pairs of skates throughout the season. What is the total cost for 1 player for skates during the season?

Statistics

SHOOTING CHART

A player's shooting percentage is determined by dividing the number of goals scored by the number of shots taken. Find each player's shooting percentage.

PLAYERS	GOALS SCORED	SHOTS ON GOAL	SHOOTING PERCENTAGE
Ryan Finnegan	**5**	**25**	
Michal Stinil	**10**	**30**	
Jay Dickman	**3**	**21**	

1. Which player had the best shooting percentage? What was it?

2. Which player had the lowest shooting percentage? What was it?

GOALTENDER CHART

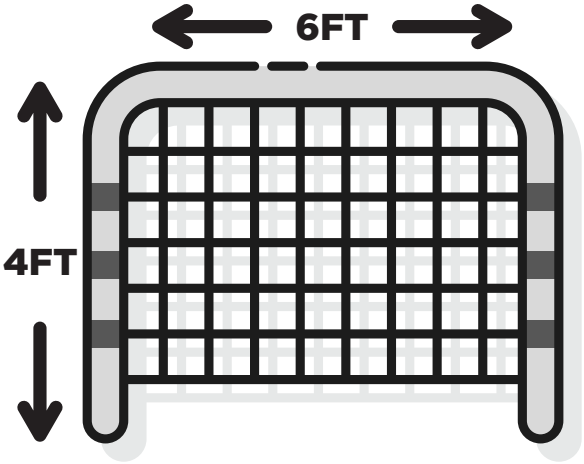
PLAYERS	SAVES	SHOTS FACED	SAVES PERCENTAGE
Matt Davis	**92**	**100**	
Roddy Ross	**22**	**25**	

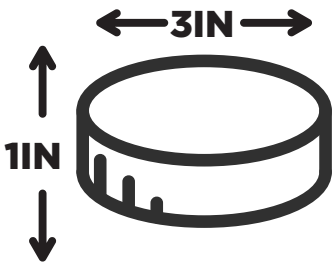
In the space provided in the chart above, find each goalie's save percentage.
*Hint: Saves Percentage = Saves/ Shots Faced

1. 1. Which goalie has the best chance of stopping a shot attempt on goal?

$x+(1-y)=?$ # Puck Math

$\sqrt{25}$ c, b, a





DO THE MATH

What is the area of the goal in square feet?
*Hint: Area = H x W

What is the circumference of the puck?
*Hint: Circumference = 2π r

What is the volume of the puck? *Hint: Volume = 2 r h

If a goalie faces 15 shots every period, how many shots does he face in a game? *Hint: 3 periods = 1 game

Dream Jersey

Bring your drawing to the fan relations table behind section 120 with your name & school if you would like to design next years jersey!

Slapshot

THE SLAPSHOT CAN SEND THE PUCK FLYING AT TOP SPEEDS OF OVER 100 MPH, WITH ZDENO CHARA SETTING THE NHL RECORD AT 108.8 MPH!

1. WIND UP

A player rotates the stick to the shoulder height, then he transfers weight from back to front foot, swinging the stick and gaining momentum.

2. CONTACT

As the player swings the stick, it strikes the ice before it comes into contact with the puck. The player uses his or her weight to bend the hockey stick.

3. RELEASE

The player shifts weight and rotates their wrist to release potential energy that was stored in the stick. This transfers to the puck sending it flying.

4. FOLLOW THROUGH

As the player rotates their wrist, it gives spin to the puck, which helps stabilize it as it flies through the air. The player follows through with the motion of swinging the stick.

Follow Along Questions

1. This morning, the Thunder are playing the Kansas City Mavericks. In what state is Mavericks located?

A. Oklahoma B. Missouri C. Texas D. Nebraska

2. If Thunder forward Michal Stinil had 8 points in his first 6 games, how many points per game (PPG) does he average?

A. 0.75 PPG B. 1.00 PPG C. 1.33 PPG D. 1.5 PPG

3. If the Thunder take 15 shots on goal during each of the 3 periods, how many total shots will they take today?

A. 24 Shots B. 36 Shots C. 45 Shots D. 60 Shots

4. The Wichita Thunder play 36 regular season home games. They play the Kansas City Mavericks 9 times. What percentage of Thunder home games is against the Mavericks?

A. 25% B. 36% C. 90% D. 360%

5. Today's game started at 10:30 am. If the game ends at 12:45pm, how long did the game last?

A. 1hr 15mins B. 6hr C. 2hr 15mins D. 2hr 45mins

6. In the span of 6 games, if the Thunder had 2 wins, 2 overtime losses, and 2 regulation losses, how many points did they collect?

A. 4 Points B. 6 Points C. 8 Points D. 12 Points

7. The Thunder's NHL affiliate are the Sharks. Which California city are the NHL Sharks located in?

A. San Jose B. San Diego C. San Francisco D. Oakland

8. If there are 18 seats in each row of Section 114, and there are 12 rows. How many seats are is Section 114?

A. 114 B. 212 C. 216 D. 240

9. Thunder goaltender Matt Davis saved 183 of 206 shots in the month of February. What was his save percentage rounded to the nearest percent?

A. 80% B. 90% C. 89% D. 190%

10. If Thunderdog throws 15 frisbees and T-Pup throws 8 frisbees, how many frisbees did the mascots throw into the crowd?

A. 23 B. 96 C. 128 D. 812

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TOYOTA KIDS ZONE

REDEEM AT FAN RELATIONS BEHIND SECTION 120 TODAY ONLY

CERTIFICATE

For the Completion of "T-Dog's Hockey Academy"

THE WICHITA THUNDER PRESENTS THIS AWARD TO:

Joel Lomurno

Joel Lomurno
General Manager

WICHITA THUNDER

Powered By TOYOTA

T-Dog

T-Dog
Mascot