



Peak Performance

Inquiry Guide: High School

1. What does IHSA stand for?

2. What is the purpose of IHSA?

3. Of the activities listed below, circle the five that are not sponsored by IHSA:

- | | | |
|-------------------------|--------------------------|------------------------------|
| Boys' Baseball | Girls' Badminton | Bass Fishing |
| Boys' Basketball | Girls' Basketball | Chess |
| Boys' Bowling | Competitive Cheerleading | Debate |
| Boys' Cross Country | Girls' Home Economics | Drama & Group Interpretation |
| Boys' Football | Girls' Cross Country | Individual Events |
| Boys' Golf | Girls' Golf | Journalism |
| Boys' Gymnastics | Girls' Bowling | Creative Writing |
| Boys' Hunting | Girls' Gymnastics | Music |
| Boys' Soccer | Girls' Soccer | Scholastic Bowl |
| Boys' Swimming & Diving | Girls' Softball | Spirit |
| Boys' Tennis | Girls' Swimming & Diving | Three-Point Showdown |
| Boys' Track & Field | Girls' Tennis | Wheel Chair Basketball |
| Boys' Volleyball | Girls' Track & Field | Special Olympics Bowling |
| Boys' Water Polo | Girls' Volleyball | |
| Boys' Wrestling | Girls' Water Polo | |
| Boys' Lacrosse | Competitive Dance | |
| Boys' Rugby | Girls' Lacrosse | |

4. Can you match the mascot with the school it represents?

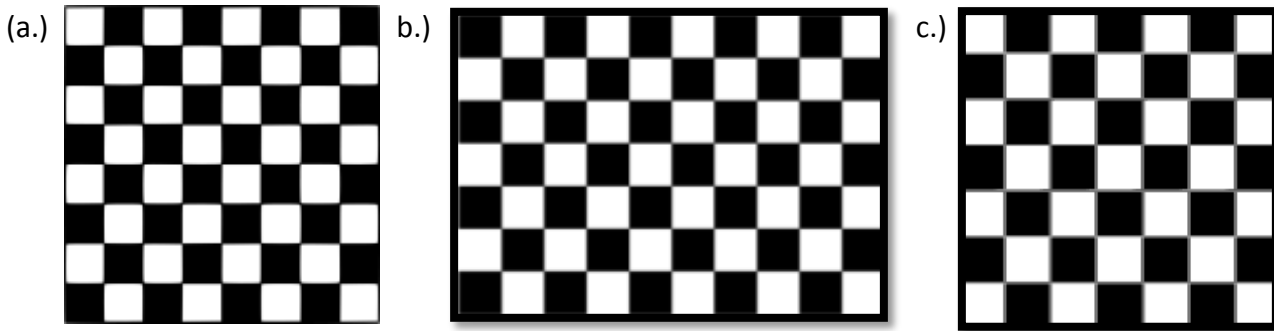


Morton High School

Monticello High School

Marissa High School

5. Which of the following represents a regulation chess board?



6. **IHSA Records Database:** Look up a high school from your town. When was the last year that high school won...

- a. A baseball tournament? _____
- b. A football tournament? _____
- c. Your favorite activity? Activity Name: _____ Year: _____

7. **Peak Performance Challenge!** Working in teams, visit each of the stations listed below. At each station, have each team member perform the challenge, and write down their score. After everyone has participated, average your scores to see how well your team performed. Is your team's cumulative score higher than other teams at your school?

(For a 100 point bonus, calculate the variance and standard deviation of each data set.) ★

Vertical Leap
Average =
Variance =
Standard Deviation =

Reaction Time
Average =
Variance =
Standard Deviation =

Balance Test
Average =
Variance =
Standard Deviation =

Strength Test
Average =
Variance =
Standard Deviation =

Kickin' It
Average =
Variance =
Standard Deviation =

Triple Dribble
Average =
Variance =
Standard Deviation =

Pivot Hoop
Average =
Variance =
Standard Deviation =



To figure out the variance:

- 1.) For each person's score, subtract the mean and square the result.
- 2.) Find the average of the squared differences.

To figure out the standard deviation:

- 1.) Take the square root of the variance.



Peak Performance

Inquiry Guide: High School

1. What does IHSA stand for?

Illinois High School Association

2. What is the purpose of IHSA?

IHSA is a not-for-profit corporation dedicated to recognizing the academic and interscholastic achievements by high school students in Illinois. The IHSA gives opportunities for boys and girls to represent their school and community in interscholastic athletics and activities that enrich the educational experience.

3. Of the activities listed below, circle the five that are not sponsored by IHSA:

Boys' Baseball

Boys' Basketball

Boys' Bowling

Boys' Cross Country

Boys' Football

Boys' Golf

Boys' Gymnastics

Boys' Hunting

Boys' Soccer

Boys' Swimming & Diving

Boys' Tennis

Boys' Track & Field

Boys' Volleyball

Boys' Water Polo

Boys' Wrestling

Boys' Lacrosse

Boys' Rugby

Girls' Badminton

Girls' Basketball

Competitive Cheerleading

Girls' Home Economics

Girls' Cross Country

Girls' Golf

Girls' Bowling

Girls' Gymnastics

Girls' Soccer

Girls' Softball

Girls' Swimming & Diving

Girls' Tennis

Girls' Track & Field

Girls' Volleyball

Girls' Water Polo

Competitive Dance

Girls' Lacrosse

Bass Fishing

Chess

Debate

Drama & Group Interpretation

Individual Events

Journalism

Creative Writing

Music

Scholastic Bowl

Spirit

Three-Point Showdown

Wheel Chair Basketball

Special Olympics Bowling

4. Can you match the mascot with the school it represents?

b.)



b.)



c.)

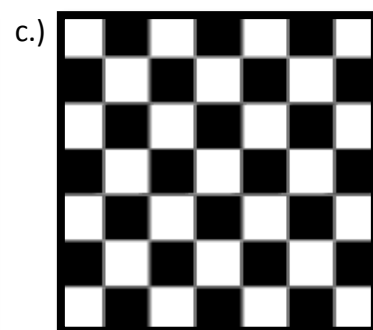
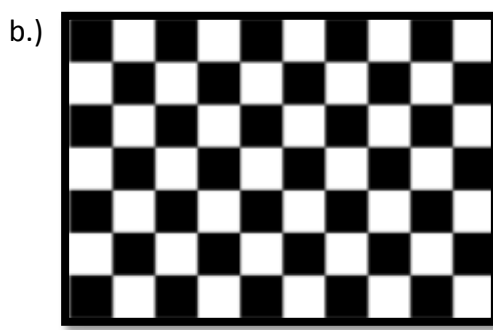
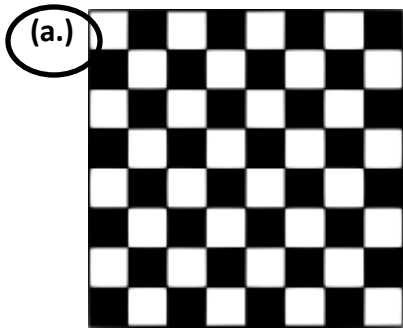


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Vertical Leap

Average = _____

Variance = _____

Standard Deviation = _____

Reaction Time

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Balance Test

Average = _____

Variance = _____

Standard Deviation = _____

Strength Test

Average = _____

Variance = _____

Standard Deviation = _____

Kickin' It

Average = _____

Variance = _____

Standard Deviation = _____

Triple Dribble

Average = _____

Variance = _____

Standard Deviation = _____

Pivot Hoop

Average = _____

Variance = _____

Standard Deviation = _____



To figure out the variance:

- 1.) For each person's score, subtract the mean and square the result.
- 2.) Find the average of the squared differences.

To figure out the standard deviation:

- 1.) Take the square root of the variance.



Inquiry Guide: High School

1. How was the Illinois River Valley formed?

2. What geologic features give evidence of the Kankakee Torrent?

3. Describe the three types of ecosystems found along the river:

a. *Bottomland Forests* =

b. *Backwater Lakes* =

c. *Floodplain Wetlands* =

4. Locks and dams are said to make "stairs in a river." What does this phrase mean?

5. Draw a diagram of a wicket dam and tainter dam.

Wicket Dam

Tainter Dam

6. What is a “river rat?”

7. The Illinois River is filled with native and invasive species of fish. What does it mean to be:

a. An *invasive* species =

b. A *native* species =

8. What is the controversy surrounding the Asian Carp fish?

9. Pollution, the introduction of invasive species, overhunting, and overfishing have all negatively affected the Illinois River. However, what is the *biggest* issue facing the Illinois River?

10. What is Emiquon, and what have they done to address the biggest issue facing the Illinois River?

11. What can you do to help preserve the Illinois River?



Inquiry Guide: High School

1. How was the Illinois River Valley formed?

The Illinois River Valley was formed by a dramatic flood called the Kankakee Torrent. The torrent was caused 14,000 to 18,000 years ago when glacial melt water from receding glaciers held back by moraines (large deposits of glacial debris) burst loose in northern Indiana and Illinois, causing a cataclysmic flood. Within a matter of days, the surging waters created the present day Illinois River and its broad floodplain.

2. What geologic features give evidence of the Kankakee Torrent?

In places like Starved Rock State Park, scour marks can be seen on the canyon walls 180 ft above river level, as well as elongated ridges (called "rubble bars") 200 feet above river level. These scour marks and ridges were caused by fast moving flood water. Additionally, places like Starved Rock have large depositions of sand and rubble, brought in by the flood water. Armored till balls (spheres of sticky clay till that were rolled along with the floodwaters and collected a coating of pebbles) serve as archaeological evidence of the Kankakee Torrent.

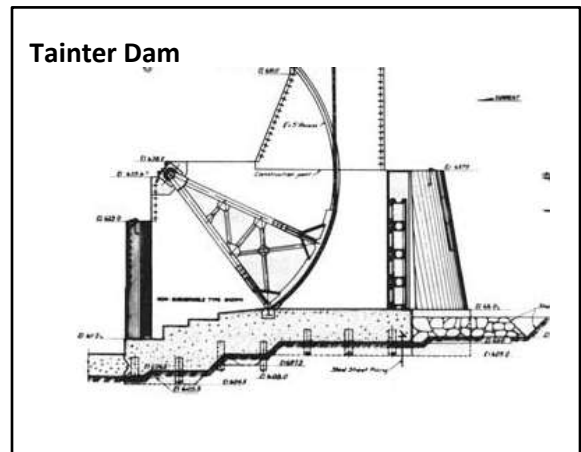
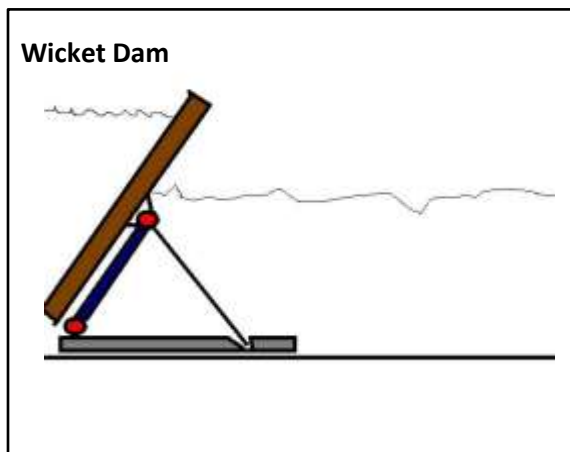
3. Describe the three types of ecosystems found along the river:

- Bottomland Forests** = Bottomland Forests are usually submerged under water in spring and dry in the summer. Trees native to this area are silver maple, sycamore, green ash, cottonwood and willows. Animals native to this area are prothonotary warblers, pileated woodpeckers, and wood ducks.
- Backwater Lakes** = Animals native to this area include green frogs, flat floater mussels, zebra mussels, bigmouth buffalo, and the northern water snake.
- Floodplain Wetlands** = Plants native to this area include the American lotus and decurrent false aster. Animals native to this area include the green-winged teal, beaver, and spiny soft shell turtle.

4. Locks and dams are said to make "stairs in a river." What does this phrase mean?

The Illinois River drops 160 feet from Lake Michigan to where it joins the Mississippi at Grafton. A series of locks overcome the change in elevation and allow the boats to travel down the river step-by-step.

5. Draw a diagram of a wicket dam and tainter dam.



6. What is a “river rat?”

A river rat is a person who makes their living from the river, harvesting various plants and animals throughout the year.

7. The Illinois River is filled with native and invasive species of fish. What does it mean to be:

- a. An *invasive* species = Flora or fauna that have been introduced purposefully or accidentally into an environment to which they are not originally from.
- b. A *native* species = Flora or fauna that are naturally present and characteristic of an environment.

8. What is the controversy surrounding the Asian Carp fish?

The Asian Carp fish was introduced to control algae in catfish farms but escaped into the wild. The Asian Carp is an invasive species that is overwhelming the Mississippi and Illinois River systems, pressuring the native gizzard shad and largemouth buffalo populations.

9. Pollution, the introduction of invasive species, overhunting, and overfishing have all negatively affected the Illinois River. However, what is the *biggest* issue facing the Illinois River?

The biggest issue facing the Illinois River is sedimentation. The many tributaries that flow into the Illinois River cut down the soft soil, delivering a heavier sediment load than the slower-moving river can carry away.

10. What is Emiquon, and what have they done to address the biggest issue facing the Illinois River?

Emiquon is short for “Emiquon National Wildlife Refuge,” and it seeks to protect, restore and manage migratory bird, fish and resident wildlife habitat in the Illinois River. Emiquon supports sediment removal. Sediment is removed from the river and then undergoes a dredging process. During the dredging process, bulldozers spread the sediment into piles and allow the sediment time to dry out. Once the sediment dries, it makes excellent top soil which can be used for farming and construction.

11. What can you do to help preserve the Illinois River?

Answers vary.