

HORSES, HISTORY, & HOOFBEATS

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ORIGINS OF THE HORSE

Earliest Horse ancestor – *Hyracotherium* (formerly as *Eohippus*)
Discovered in North America from fossils about 50 million years old.



HEIGHT:
12–14 inches
DIET:
Berries, fruits, herbs
CONFORMATION:
Padded foot with toes (four on front and three behind); short neck and arched back



MESOHIPPUS “Middle Horse”



HEIGHT:
about 24 inches
DIET:
foliage
CONFORMATION:
three toes on each foot; long legs and relatively flat back




PLIOHIPPUS “More Horse”



HEIGHT:
about 50 inches
DIET:
grazed on grasses
CONFORMATION:
one dominant toe with two side toes receding; long neck and long face





EQUUS "First Horse"



HEIGHT:
taller than 53 inches

DIET:
Grains, grasses, and other forages


CONFORMATION:
one toe (the hoof);
Long neck and long face

50-55 million years ago (Eocene epoch)


Approximately 1 million years ago (Pliocene epoch)

Modern horse in 2015 (Holocene epoch)




Horse Domestication

- Horses were first used for food and hides.
- The Horse was domesticated in the Far East by early civilizations about 5,000 years ago (around 3,000 BC)
- Domestication probably occurred when young animals were captured and kept tethered or in pens.
- The nomadic horse-owners realized that a horse could be made to carry goods and equipment.
- The earliest widespread use of domesticated horses was as pack and harness animals.
- The Egyptians and Greeks used horses mainly to pull their chariots.
- The Persians were excellent horsemen and by 500 BC, had a powerful cavalry with horses able to carry heavy armor and weapons.





Divergence of horses

Harness types



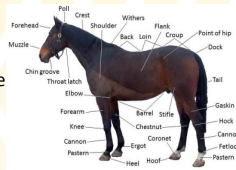
Riding types





Who's That Horse?

- Ω Horses come in a variety of shapes, sizes and colors
- Ω Different traits were selected for different reasons resulting in more than 350 breeds worldwide
- Ω Recognize breed characteristics through physiological features, colors and markings



Basic Coat Colors



Bay



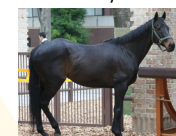
Black



White



Chestnut



Brown

Variations to Coat Colors



Palomino



Grey



Roan



Dun or Buckskin



Pinto or Paint

Leaving a Mark



Measuring Up

Ω Horse height is measured in hands at the withers

- Ω 1 hand = 4 inches
- Ω Recorded as hands high (hh)



Ω Horse weight can be listed as pounds, kilograms, or stones

- Ω 1 pound = 0.45 kilograms or 14 stones

Ω In a horse race, distance is measured in furlongs

- Ω 1 furlong = 0.124 or 1/8 mile



Horse Types

Light horses

Hot Blooded

Under 1,500 pounds

Used for riding



Draft horses

Cold-blooded

Over 1,500 pounds

Work horses



Big and Little



Guinness Book of World Records

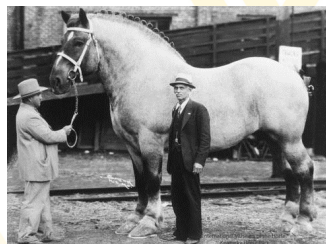
World's Tallest Horse

Big Jake
20 hands high (80 inches)

World's Shortest Horse

Thumbelina
4.3 hands high (17.5 inches)

Tipping the Scales



1928-1948
Brooklyn supreme
Belgian Draft
19.2hh
Weighed 3,200 lbs.
Girth of over 10 feet.
It took 30" of iron to make one shoe for him.

Horse Powered Threshing Machine

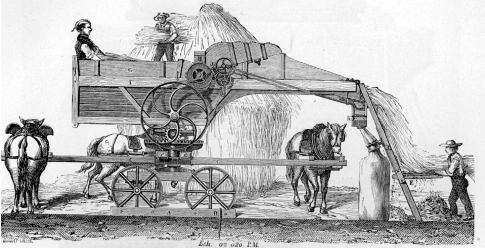


Fig. 349. — Batteuse Darnay à manège direct placé sous la batteuse.

"Batteuse 1881" by Unknown (Dictionnaire d'arts industriels) - cropped image from 1881 Dictionnaire d'arts industriels. Licensed under Public Domain via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:Batteuse_1881.jpg#/media/File:Batteuse_1881.jpg

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What is Power?

- Power is the rate of doing work
- A measure of how quickly a job can be done
- Calculate power by dividing the work done by the time it takes to do it.
- The unit is foot-lbs/second.

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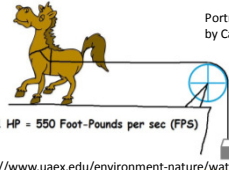
What is Horsepower?

- Horsepower is a unit of power
- Power has units of energy per unit time ($P=W/t$)
- Power is measured in watts
- Watts is one joule of work done in one second

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Horsepower

- Inventor James Watt came up with a formula for horsepower to compare horse power (the common source of power before machines were invented) to his steam engine's power.



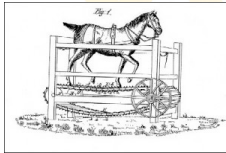
Portrait of James Watt (1736–1819)
by Carl Frederik von Breda

Source :<http://www.uaex.edu/environment-nature/water/docs/IrrigSmart-3241-A-Understanding-water-horsepower.pdf>

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Horsepower and watts

- One horsepower equals 746 watts.
- If you took a one horsepower horse and put it on a treadmill, it could power a generator and produce a continuous 746 watts.



Patent drawing of Eliakim Briggs' horse treadmill(1834)

Source: newyorkhistoryblog.org/2013/04/01/eliakim-briggs-horse-power-inventor/#more-5139



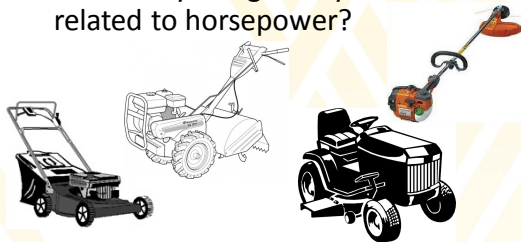
Watts up?

- Where have you heard the term watt?



How's your Horsepower?

- How many things can you name related to horsepower?



How much Horsepower?




In 2015 NASCAR Sprint Cup race cars are running engines with 725 horsepower. Typical speed is around 200 miles per hour.




Famous Horses Through History

- Ω Movie and television stars
- Ω Race winners
- Ω Dancers
- Ω Jumpers
- Ω Ranch hands
- Ω Transportation
- Ω Soldiers
- Ω Other?




Miser Ed




Lone Ranger




Staff Sergeant Reckless
Photo courtesy of United States Marine Corps



<http://www.lipizzan.org/aboutlipizzans.html>



Trigger
<http://www.happytrails.org/trigger.html>



One Giant Leap....






Man O' War vs. Sir Barton

1917-1947
 Man o' war
 ("Big Red")
 28 foot stride length
 Won 20 of 21 races
 Won one race by 100 lengths (800 feet)

More information at:
<https://espn.go.com/sportscenry/features/00016132.html>




Catch Me if You Can...






Secretariat – 1973 Belmont Stakes


1970-1989
 Secretariat
 1973 Triple Crown Winner
 Won the Belmont Stakes by 31 lengths (248 feet)



Can I work with horses?

- Equine industry is a multibillion dollar industry
- Some careers with horses are very hands on
 - Can you name some equine careers?





How can I gain experience?

- What are your skills?
- What do you like to do?
- Have you owned a horse?
- What experience do you have?



So you want to be a Jockey

- Must be 5 foot 5 or shorter
- Must weigh between 100 and 115 pounds
- Must meet the physical demands of being a jockey
- Earn a per mount fee (\$30 - \$100)
- May earn more if horse wins, shows, or places (1st, 2nd, or 3rd) in the race
- The North American Racing Academy (NARA) offers the only college degree earning opportunity for jockeys in the U.S.
- Can be a very dangerous career - at risk with every ride/race



So you want to be a Veterinarian



Dr. Chrislyn Wood Nicholson, Poultry Specialist with USDA APHIS Veterinary Services - See more at: <http://blogs.usda.gov/2011/07/28/dr-chrislyn-wood-nicholson-on-world-veterinary-year-2011/#sthash.idqmpzC.dpuf>

- Need to study by taking mathematics, chemistry, biology and physics courses in middle and high school.
- Earn an Undergraduate Degree in biological and physical sciences or a Veterinary and Biomedical Sciences Program while maintaining good grades
- Apply to Veterinary schools
- Spend another 4 years in Veterinary school (more if you want to specialize).

Jobs about horses without direct contact with them

- Equine nutrition
- Equine publications
- Equine organizations
- Racetrack workers
- Others





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Any Questions?

Thank you

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