Poultry Skillathon 2021 Study Guide

Exhibitors will participate in a livestock skillathon for the species they plan to exhibit at the fair. This study guide includes all topics an exhibitor might be tested on. Youth will only be tested on a portion of these items. Example questions are given to help study but may not be the same questions asked.

Be sure to bring your completed project book and show up in proper show dress code as stated in the Jr. Fair rule book for your species.

STATION 1 – Project Book & Interview and Dress Code
Present your completed project book to the judge. The judge will review your record and award points for completion. You will also be asked a series of questions based on the project you are taking. It will be up to you to properly state which project you are enrolled in when you arrive at the interview station. Questions may include general information about your project goals as well as content-based questions. Individuals must dress in the appropriate dress code as listed in the Jr. Fair Rule Book for your species market or showmanship exhibition.

STATION 2 – Biosecurity
Participants will be asked questions concerning Biosecurity as it relates to poultry. Questions will relate to the 6 basic steps you can take to make biosecurity a part of your daily routine. Information can be found at the following websites:
Biosecurity Tips: 6 Ways to Prevent Poultry Disease:
Protecting the Health of Your Flock:
https://ohio4h.org/sites/ohio4h/files/imce/Protecting%20the%20health%20of%20your%20flock.%20from%20OPBA%202016Jan.pdf

STATION 3 – Skillathon Kit Knowledge – Breeds
This station will consist of identifying breeds of Chickens, Ducks and Turkeys. You can click here: https://ohio4h.org/poultrybreeds to view videos and information on each breed. There are also practice quizzes at go.osu.edu/madcoskillathon

STATION 4 – Skills Knowledge – Meat Cuts
Exhibitors will be asked to identify various meat cuts from a chicken, a duck and a turkey. Review this document to help study: Poultry Meat Cuts

STATION 5 – Parts of an Egg
At this station, participants will be asked questions about various parts of an egg and their functions. Review the information below to help study:
- Yolk carrying the ovum - produced by the ovary
- Albumen or egg white - produced mainly in the magnum
- Shell membranes - produced in the isthmus
- Shell - produced in the uterus or shell gland
The avian egg contains a mixture of nutrients that can be described as a complete food. The yolk, egg white, and shell contain all the proteins, carbohydrates, fats, minerals, and vitamins necessary to support the growth of the embryo during the 21-day incubation period. The albumen (egg white) and yolk of the egg serve as food for the growing embryo during the incubation period.

The yolk occupies the center of the egg. There are two types of yolk, white yolk and yellow yolk. Yellow yolk is produced during the day by the hen and contains more fat. White yolk is produced at night and contains more protein. In the center of the yolk there is a spherical mass of white yolk called the latebra. A column of white yolk connects the latebra to the Nucleus of Pander, which is also made of white yolk. The Nucleus of Pander provides the place where the embryo develops. The blastoderm is an early stage of the embryo, present when the egg is laid. The blastoderm is attached to the Nucleus of Pander. The blastoderm grows during the incubation period to ultimately become the chick.

The vitelline membrane surrounds and protects the yolk. The chalaziferous layer is a fibrous layer of albumen and directly covers the entire egg yolk, just outside the vitelline membrane. In the long axis of the egg, the chalaziferous layer is twisted at both sides of the yolk, forming a thick rope-like structure named the chalazae (chalaza is the singular term). The chalazae function to suspend the egg yolk in the center of the egg. They prevent the yolk from rising and touching the shell. The chalazae allow the yolk to rotate and they function to keep the blastoderm on the top side of the yolk, close to the heat of the hen’s body.

The egg white or albumen consists of several layers that surround and protect the blastoderm and yolk. The semisolid albumen serves as a shock absorber due to its semi-elastic properties. The albumen also contains a large amount of water which is needed by the developing embryo.

The yolk and albumen work together to protect and sustain the life of the growing embryo.

The shell membrane and shell surround and protect the albumen and yolk. Gases (for example oxygen and carbon dioxide) can pass through the shell because it is gas-permeable. Oxygen passes into the egg and carbon dioxide passes out through the shell. As the embryo grows, carbon dioxide is produced and oxygen is consumed. If the shell were not gas-permeable, the embryo would die due to a lack of oxygen and the presence of too much carbon dioxide. Water vapor can also pass through the shell, but the shell does act to slow the loss of water, so that enough is retained inside the egg for the growing embryo. The shell and shell membrane also function to keep the nutrients inside the egg.

The inside of the shell is lined by the double-layered shell membrane. One of the functions of the shell membrane is to provide a barrier to disease organisms (for example bacteria).
After the egg is laid it cools and the contents inside contract (shrink). The shell cannot contract, at least not as much as the contents inside. As a result, air is drawn into the egg to form an air space between the inner and outer layers of the membrane. The air space normally develops at the large end of the egg because the shell is more porous there (in other words the air can move into the egg at a faster rate at the large end). As the egg incubates, carbon dioxide and water escape from the egg through the shell. The air space increases in size to compensate for carbon dioxide and water loss. Close to the end of the incubation period, the chick breaks through the membrane of the air space and takes its first breath of air.
TIE BREAKER: Feed Tag
You will also be asked 5 questions relating to information found on Feed Tags typical for poultry feeds. A sample feed tag activity is attached to this study guide.

**Sample Questions:**
What is the main ingredient in this feed?
What is the active drug ingredient?
What is the crude protein level?
What disease does the medication prevent?
What is the crude fat level?
Is ground limestone included in this feed?
What type of poultry is this feed designed for?
What age poultry should be fed this feed?

**Additional Resources:**
Basic information about chickens:
https://ohio4h.org/sites/ohio4h/files/imce/animal_science/Poultry/Basic%20Information%20About%20Chickens%20rev%2022-18%20reduced.pdf
Ohio 4-H Poultry Resources: https://ohio4h.org/poultryresources