

Artificial Incubation in the Classroom

Choose an incubator to suit you:

- Manual turning is good for pupils' involvement but needs to be done when school is closed, too.
- Some have better viewing windows.
- Hire or purchase?
- Where do you source your eggs?
- What happens to the chicks?



Setting Up

- Health and safety signage
- Stable site: near a power source and away from busy traffic, drafts, strong sunlight.
- Ensure that the incubator is clean, dust-free and working properly.
- Run it for at least 12 hours before adding eggs, following the manufacturer's instructions.
- Check the temperature is consistent.



SURO 29

TEMPERATURE

HUMIDITY

38.0 °C
F

88 %

R-COOL
Digital Incubator

TEMP	TEMP
HUMI	rH
ALARM	HI
ALARM	LO
°C ↔ °F	C/F
PUMP	5 sec
RESET	5 sec

Home + - R O.K. Mute

PUMP POWER

POWER INLET

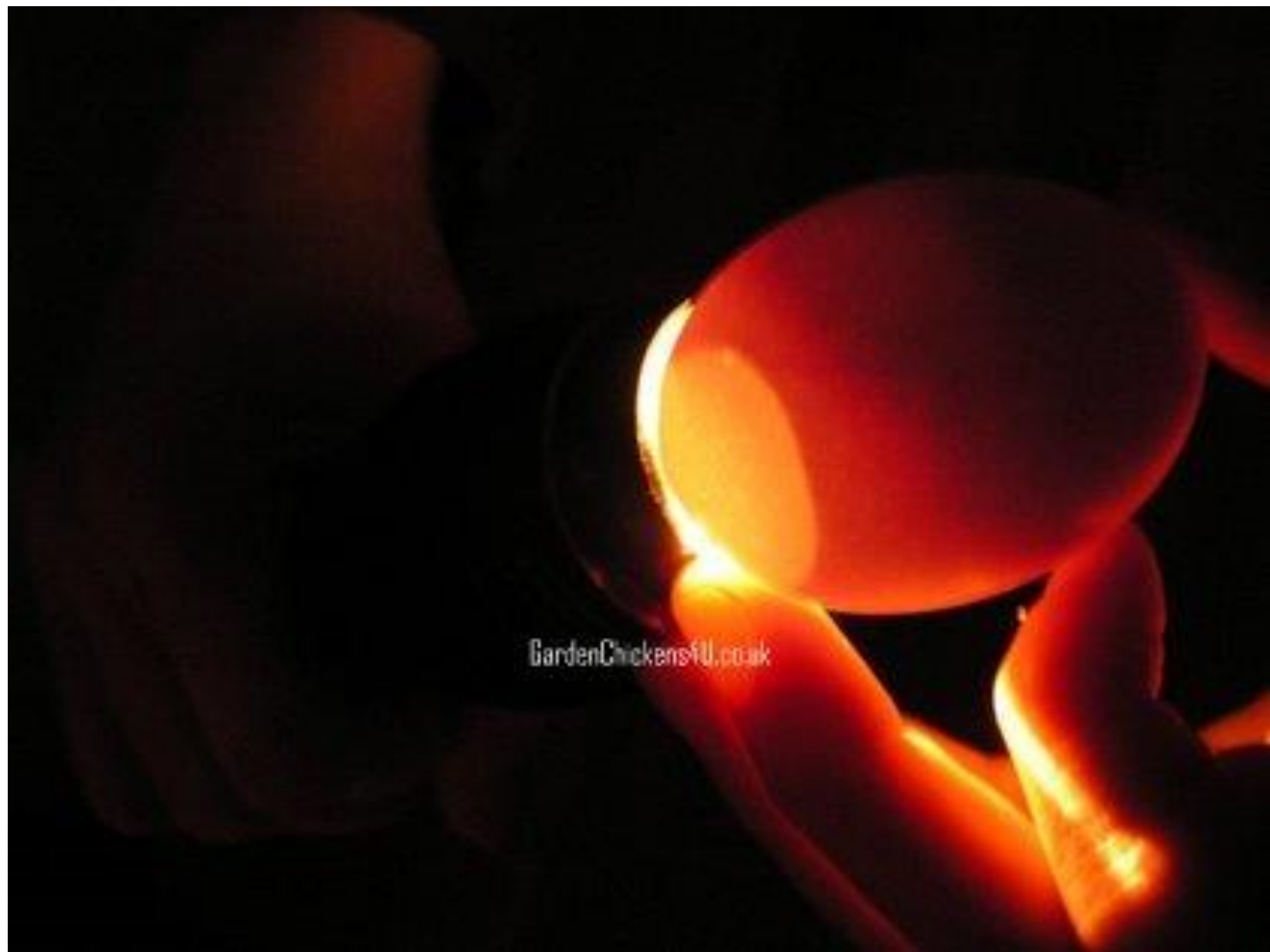
Up and Running

- Add tepid water to the reservoirs, avoiding any electrical parts. Never top up with cold water.
- Adjust the thermometer, if appropriate, so that the bulb is within a few centimetres of the height of the eggs.
- Eggs need to be 37.5 °C at the centre, which means an incubator temperature of 38°C



The Best Chance

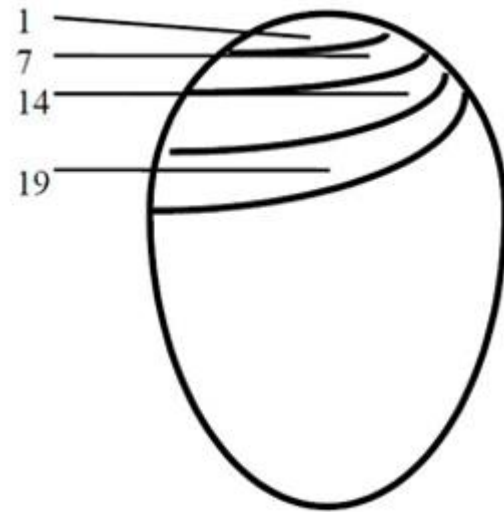
- Eggs up to a week old have a greater chance of hatching.
- Store eggs widest end up before adding to the incubator.
- Allow eggs to stand like this at room temperature for 24 hours before adding to the incubator, to allow a gradual adjustment.
- Discard any cracked or dirty eggs.
- Mark eggs with a cross on one side, to ensure that the turning mechanism is working effectively.

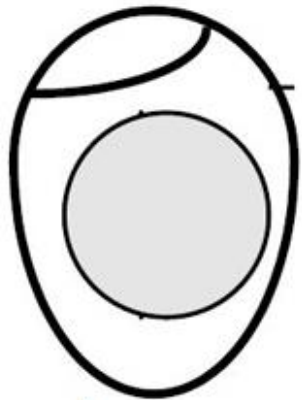


GardenChickens4U.co.uk

Monitoring Progress

- Weighing: eggs should lose between 12 and 15 % of their weight during incubation
- Checking temperature and humidity (wet bulb system)
- Checking water levels
- Candling
- Measuring air space
- Checking movement
- Listening!

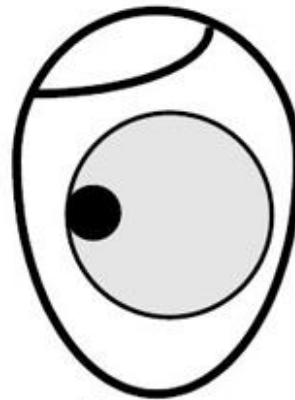




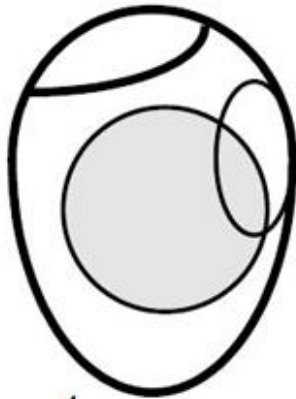
1



2



3



4



5



6

What to look for

- 1) Clear when candled - probably infertile (or very early death) when candled at 1/3 of the incubation period
- 2) Fertile with red blood vessels - after 1/3 of the incubation period
- 3) Red or black staining - early death when candled at 1/3 of the incubation period
- 4) Embryo with red blood 'ring' - early death when candled at 1/3 of the incubation period
- 5) Dark outline with ill defined detail - late death (1/2 or 2/3 of the incubation period)
- 6) Live embryo with bill in air sack - due to hatch in 24-48 hours

Day 19

- Stop turning mechanisms a couple of days before hatching. This enables the chick to manoeuvre itself into the best position for breaking out. Or move eggs to a separate hatcher.
- Add more water if recommended. Eggs need around 45% humidity for development, increased to 75% for hatching.
- Prepare the brooder!

Day 21?

- Chicks will 'pip' before hatching once their beak has penetrated the air space. A mother hen would call back in encouragement.
- Some pip days before hatching, some only once hatching has properly begun.
- Eggs will rock and wobble.
- The first impact on the shell is usually a diamond shape on the top, near the wide end!

Chicks haven't read the manual.

- Some chicks arrive on day 20, some on day 23 or even later! Be patient.
- Too low or too high a temperature can affect this, as can a power cut of even a few hours.
- Hatching can take 24 hours, but is a struggle they are prepared for!
- Leave chicks in the incubator until they have fluffed up.



Good Practice

- Keep the lid on as much as possible. Only take dry chicks out if they are causing trouble, and do it quickly.
- Don't intervene: chicks are connected to the shell via blood vessels and membranes that are still healing during the hatch. Picking at a shell to 'help' can result in a chick bleeding to death.
- A brief period of frantic activity will be followed by stillness; chicks will rest often between escape attempts.



The First Days

- The brooder should be set up at the same temperature as the incubator. Provide a warm and a cooler area.
- Slippery surfaces can damage chicks' legs. Use towelling or similar at first. Soft bedding such as Dengie Medibed are good but check no chicks are eating them.
- Use a shallow, wide feeder filled with chick crumbs.
- Make sure the water dish isn't a drowning hazard. Fill with tepid water.





Are they alright?

- Chicks have enough stored yolk for a day or two.
- Some need to be shown how to feed and drink. Dip their beaks in the water gently. Imitate a mother hen by picking up crumbs and dropping in front of the chicks. On to paper gets their attention.
- Chicks sleep a lot, often face down!



Some Problems

- Splayed Leg: a common occurrence but easily fixed!
- Starve-outs: make sure all the chicks are eating and drinking.
- Deformities: could be genetic, congenital or caused by a dietary deficiency in the parent.
- Huddled heap of chicks: raise heat lamp.
- Scattered to edges of brooder: lower heat lamp



Raising Babies

- Chicks need heat for the first 5 weeks, with a gradual reduction. Introduce them to the outdoors bit by bit, as they start to feather up.
- Keep the brooder clean and well-ventilated
- Chick crumbs provide all they need; available with or without an added coccidiostat.
- Tiny amounts of other foods are a good idea after the first week. Provide aviary grit with it.



Lesson Links

- Pupils can perform all the checks needed on a daily basis, with adult supervision for some.
- Record keeping and calculations are an important part of effective incubation.
- Responsibility for and empathy with the chicks in their care is unavoidable!
- Adaptation, habitat and life cycles.





