"Survival of the fittest" means that the strong succeed, and the weak fail, right? Well, often that's how it's portrayed, but the real story is a bit trickier. Let's take a closer look at what the crickets do...

AH... THE MOON, STARS, A GENTLE BREEZE, CHIRPING CRICKETS... LOVE IS IN THE AIR, WANDA. IT'S A PERFECT NIGHT FOR...

... LESSONS IN THE MATING HABITS OF CRICKETS AND NATURAL SELECTION!

ARGH... I'LL GO WAIT IN THE CAR.

OUR GUY IS A BIG, HEALTHY SPECIMEN—STRONG, CONFIDENT, AND LOOKING FOR LOVE!

NATURAL SELECTION: WE'VE ALL HEARD IT EXPLAINED AS "SURVIVAL OF THE FITTEST." THE STRONGEST AND FASTEST WIN. IF YOU'RE TOO WEAK OR SLOW, WELL, TOO BAD, RIGHT?

NOT QUITE. LET'S START WITH A SINGLE MALE CRICKET.

WHY Cough a one, and a two, and...

WHAT FEMALE WOULDN'T WANT A PIECE OF THIS?

HELLOOO... LADIES!!!
Not far away, a female cricket likes what she hears...

**Oh yeah! My exoskeleton is sooo glossy! I'm parasite free!**

Oh my!

That's one hunka hunka burnin' cricket! Just the kind of male I want to fertilize my eggs!

So she heads off toward the caller, following the sound.

Meanwhile, in a nearby burrow

*Oh girl, you make my antennae tremble! Together we can make extremely fit offspring!!*

**I mean, I wanna mate as much as the next guy cricket, but you don't hear me announcing it to the whole meadow.**

Will ya listen to this blowhard?

Actually, that gives me an idea.
This silent, or "sneaker," male cricket moves to intercept the approaching female.

Oh yeah, I'm the one who's parasite-free and all that.

Heh heh... Yeah, my song...

Shhh... You had me with the song. Now, less talking, more mating.

The sneaker male's gambit pays off.
AND OUR ORIGINAL, STRONG, LOUD CALLING MALE IS OUT OF LUCK.

**LAST CHANCE FOR YOU!**
SPECIAL LADIES TO... uh... MEET A REALLY GREAT GUY??

Au, forget it.

IN FACT, HIS SONG HAS ATTRACTION SOME UNWANTED ATTENTION.

I'm almost there... Keep chirping, you big, juicy Bozo!

Feets, don't fail me now!

SO, IN THIS CASE, THE SNEAKER MALE GETS TO MATE, AND THE SINGING ATTRACTIVE MALE GETS EATEN BY A BAT.

ERK!

SNATCH!

SEE, "SURVIVAL OF THE FITTEST" ISN'T NECESSARILY ABOUT BEING THE TOUGHEST, FASTEST, OR MOST ATTRACTIVE. IT'S REALLY ABOUT SURVIVING TO PASS THE GENES THAT ENCODE TRAITS AND BEHAVIORS ON TO OFFSPRING.

MAYBE OUR SNEAKER MALE'S KIDS WILL INHERIT THE "SNEAKY" GENES, AND IN TURN USE SNEAKY BEHAVIOR LIKE THEIR FATHER.

OF COURSE, TOUGHNESS CAN HELP TO INCREASE AN ORGANISM'S CHANCE OF LIVING LONG ENOUGH TO REPRODUCE...

WHY WASTE OUR ENERGY SINGING WHEN SOMEONE ELSE WILL DO IT FOR US?

I'm no chump! Heh heh.

...BUT REPRODUCTION AND THE PASSING ON OF GENES ARE MOST IMPORTANT IN TERMS OF EVOLUTION, AND THERE ARE MANY WAYS THAT AN INDIVIDUAL CAN GET THEIR GENES INTO THE NEXT GENERATION.
1. When it comes to crickets, what does fitness mean?
2. Is calling good or bad for a cricket's fitness?
3. Give some examples of selection at work in this cricket story.
4. How does selection favor calling? How does selection favor not calling?

Extra Cricket!

Crickets don't actually sing with voices, like birds or people. The male cricket's song is made by scraping one wing across another, sort of like a violin bow scraping across a string.

Crickets chirp more often if it's hotter. In fact, it's possible to estimate the temperature based on the frequency of cricket chirps.

How 'bout this heat?
Read the comic “Survival of the Sneakiest” and answer the following questions.

1. “Survival of the Fittest” is usually associated with natural selection. Does this cartoon support the idea of “survival of the fittest”? Yes or No? Explain your answer.

2. What desirable qualities (traits) does the singing cricket (the healthy, loud one) have? (This indicates his fitness.)

3. How did the sneaky cricket get the mate instead of the desirable, big, healthy cricket?

Fitness is a handy concept because it lumps everything that matters to natural selection (i.e. survival, mate-finding, reproduction) into one idea. The fittest individual is not necessarily the strongest, fastest and biggest. A genotypes’ fitness includes its ability to survive, find a mate, produce offspring---ultimately leave its genes in the next generation.

4. Judging from the cartoon, why would you say the cricket’s mating call was good for his fitness?

5. Why would you say the cricket’s mating call was bad for his fitness?


7. How can a cricket’s chirp help us figure out the temperature?