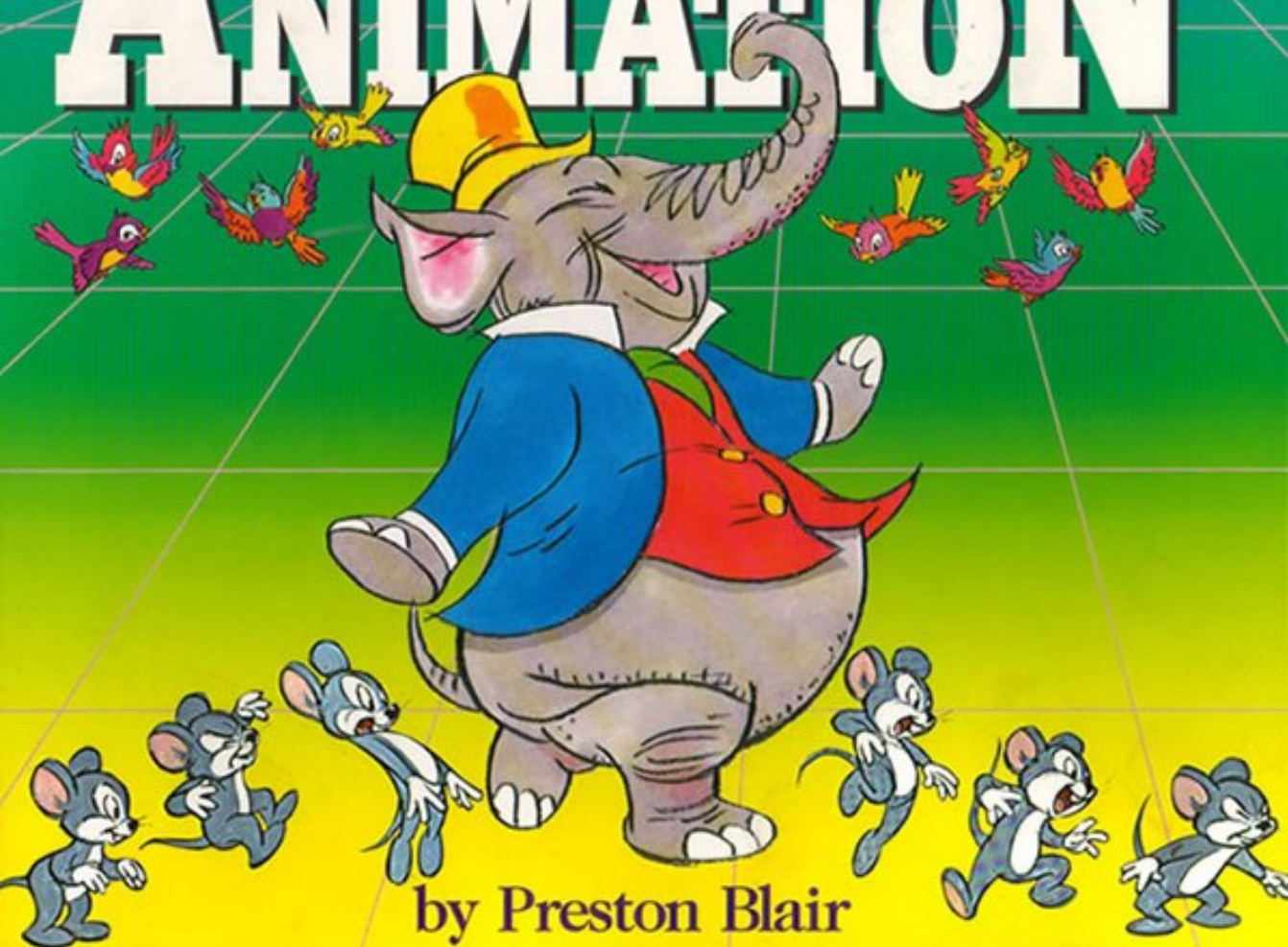


CARTOON ANIMATION



by Preston Blair

Chapter 2 : CHARACTER MOVEMENT

Once the character has been developed, the animator must consider the types of actions that are appropriate for it. A character's basic design should contain a sense of movement to convey a message to the viewer about the character's actions and intended actions. One way to accomplish this is to use the "line of action" that is the basis for rhythm, simplicity, and directness.



This chapter includes rhythm charts for creating movements of both humans and animals. These charts demonstrate that not only must the head, legs, arms, and hands move in proper relation to one another, but also the body mass must follow. The exercises on page 100 that demonstrate the movements of a man diving into a pool and of a bouncing ball are excellent examples of accurate follow-through. Movements within the figure such as "squashing", "twisting", and "stretching" are only a few of the movements studied in this chapter.

An animation cycle is a series of drawings that take a character through a complete movement (for instance, a walking step). Complete cycles for continuous animated movement and the differences in body attitudes for such movements as running, walking, dancing, posing, and much more are also included. Another subject introduced in this chapter is adapting a character to a background. This subject is covered in detail in the "Technical" chapter, but this introduction is an excellent stepping-stone to the more complex instructions.



By following the instructions in this chapter, you can make any character-person, animal, or inanimate object-come to life through animated movement. It is exciting and great fun to do.

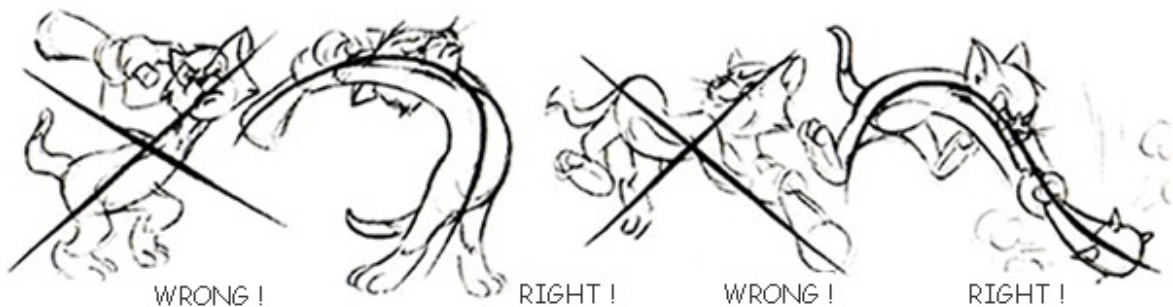
LINE OF ACTION

AN IMAGINARY LINE EXTENDING THROUGH THE MAIN ACTION OF THE FIGURE IS THE "LINE OF ACTION." PLAN YOUR FIGURE AND ITS DETAILS TO ACCENTUATE THIS LINE. BY DOING SO, YOU WILL STRENGTHEN THE DRAMATIC EFFECT. THE FIRST TO DRAW WHEN CONSTRUCTING A FIGURE IS THE LINE OF ACTION.

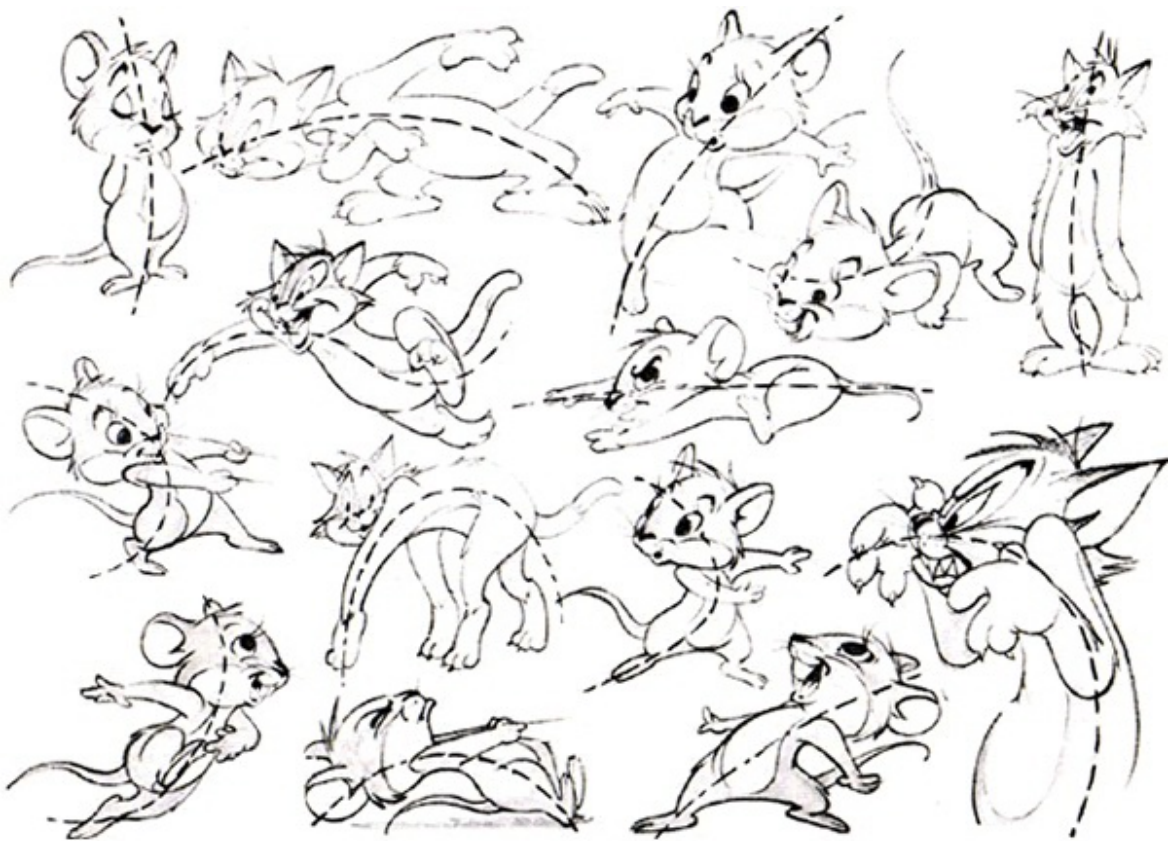


[left] WRONG ! THE LINES OF ACTION DO NOT FIT.

[right] CORRECT! THE LINES OF ACTION FIT AND ARE ACCENTUATED.

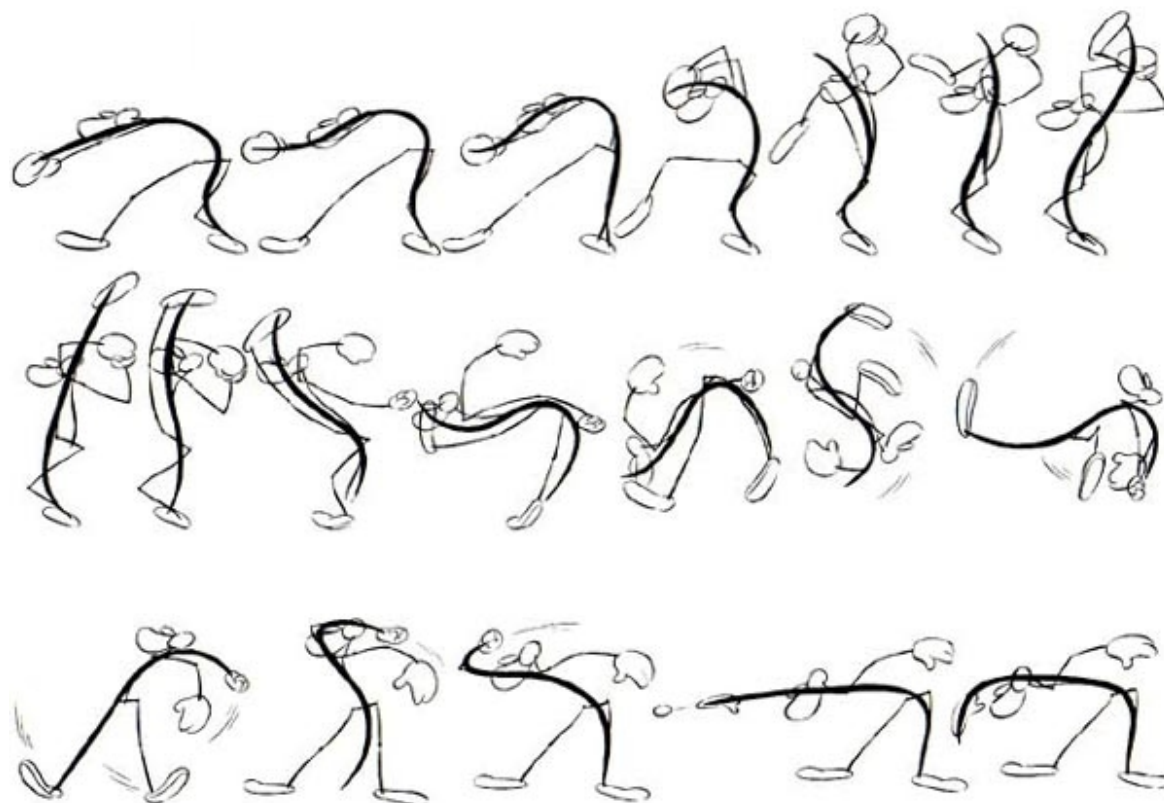


STUDY THESE DRAWINGS IN WHICH I 'VE INDICATED THE LINE OF ACTION.



LINE OF ACTION IN ANIMATION

THE LINE OF ACTION IS THE BASIS FOR RHYTHM SIMPLICITY, AND DIRECTNESS IN ANIMATION. START YOUR ANIMATION WITH A LINE OF ACTION. THEN DRAW THE SKELETON AND THE DETAILS.



(download long image)

FINALLY ... ANIMATE ALL THE DETAILS.



frame 1  **PLAY** **STOP**  



frame 1  **PLAY** **STOP**  



RHYTHM AND DESIGN IN CARTOON ART

RHYTHM AND DESIGN ARE THE SECRET FORMULAS BEHIND THE APPEAL AND CHARM OF GREAT CARTOON ART. ARTISTS HAVE INSTINCTS THAT TELL THEM THESE THINGS. THE FOLLOWING ABSTRACT DESIGN BASIS SHOULD HELP YOU.

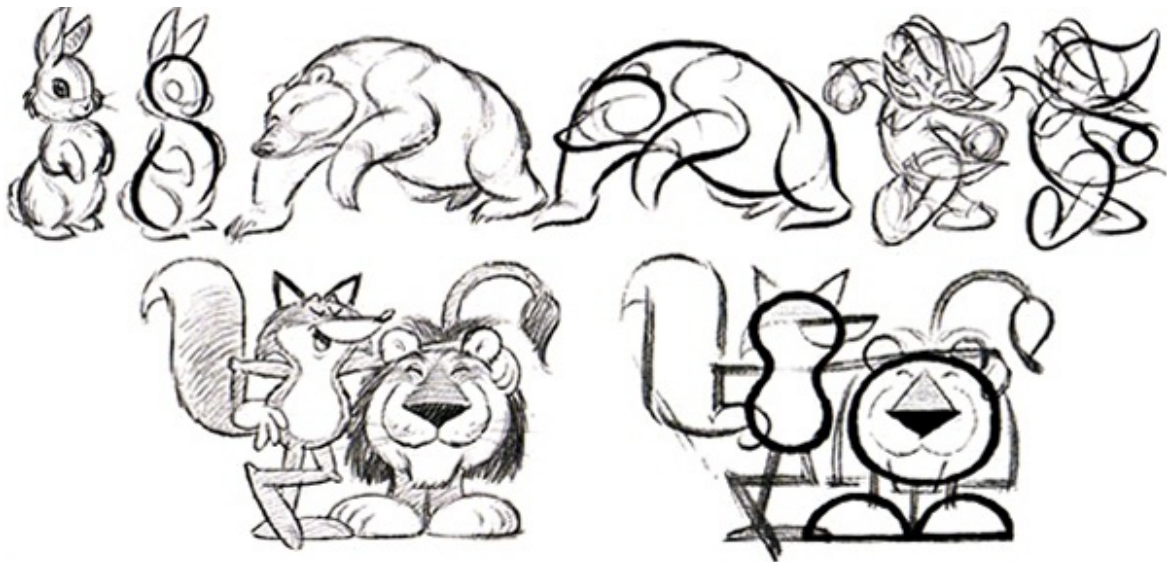


THE LINE OF BEAUTY CURVE AND VARIATIONS

THE STRAIGHT LINE BECOMES ANGULAR

DESIGNS GEOMETRIC SHAPES ARE THE BASIS OF MANY CARTOONS

THE BASIC "S" CURVE OF RHYTHM AND THE OPPOSING ARCS (SECOND FROM LEFT) HAVE GREAT VALUE FOR YOUR DRAWINGS. LEARN THEIR VALUES, SUCH AS THE "VALUE OF A STRAIGHT LINE." MANY DRAWINGS FAIL WITHOUT IT.



REPETITION OF LINES IN DIFFERENT PARTS OF THE CARTOON ADDS CONTRAST TO OPPOSING LINES. THE **LINE OF ACTION** IS THE SWEEP OF BASIC FORMS FROM THE LEGS THROUGH THE HEAD. WEAVE THESE FORMS TOGETHER TO CREATE RHYTHM AND MOVEMENT. **CONTRAST** OF LINES ENHANCES THE DESIGN. VERTICALS, DIAGONALS, AND HORIZONTALS WITH ANGLES CONTRAST AND OPPOSE RHYTHM CURVES AND ARCS. GEOMETRIC SHAPES SHOULD BE IN SHARP CONTRAST FOR DESIGN AND CHARACTER DEFINITION.

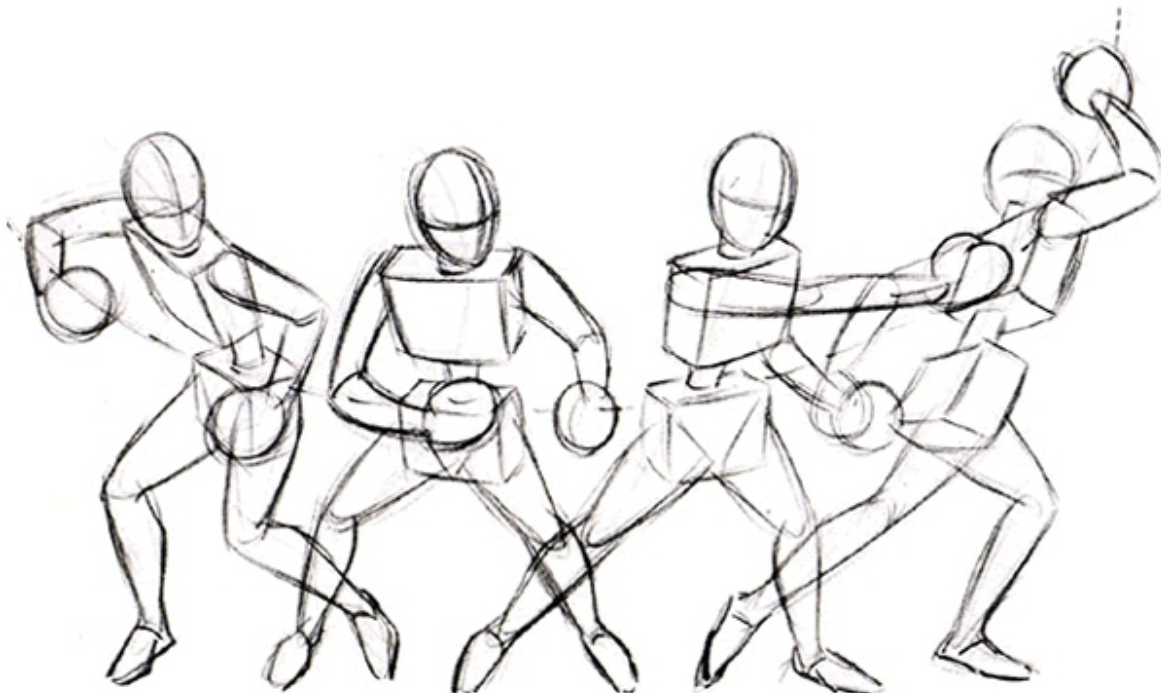


RHYTHM LINES (LEFT) ARE OFTEN BROKEN AND MAY JUMP BETWEEN PARALLELS. A SERIES OF OBJECTS OR SPOTS CAN CREATE A LINE.

OPPOSITION OF LINES IS IMPORTANT. VERTICALS OPPOSE HORIZONTALS, AND ANGLES OPPOSE ARCS. THE RABBIT AND THE ELF ARE EXAMPLES OF OPPOSING ARCS OR RHYTHM CURVES. **ACCENTS**, WHICH ADD TO THE DESIGN INTEREST AND CUT MONOTONY IN LINES, OCCUR AT BREAKS OR AT INTERSECTIONS OF OTHER LINES OR OBJECTS.

MOVEMENT OF BODY MASSES

HERE ARE SOME SIMPLIFIED FIGURES IN ACTION TO SHOW YOU THE TWIST AND TURN AND THE VARIATION OF PERSPECTIVE IN THE MAIN BODY MASSES. BUILDING THE FIGURE IN SOLIDS MAKES ANIMATION EASIER TO "FEEL OUT."





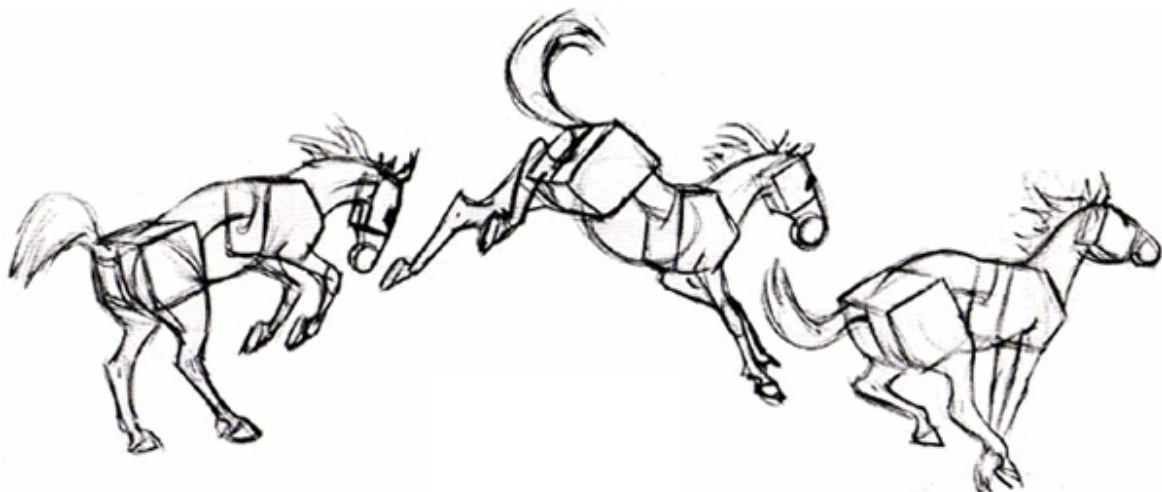
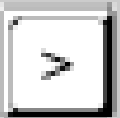
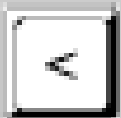
frame

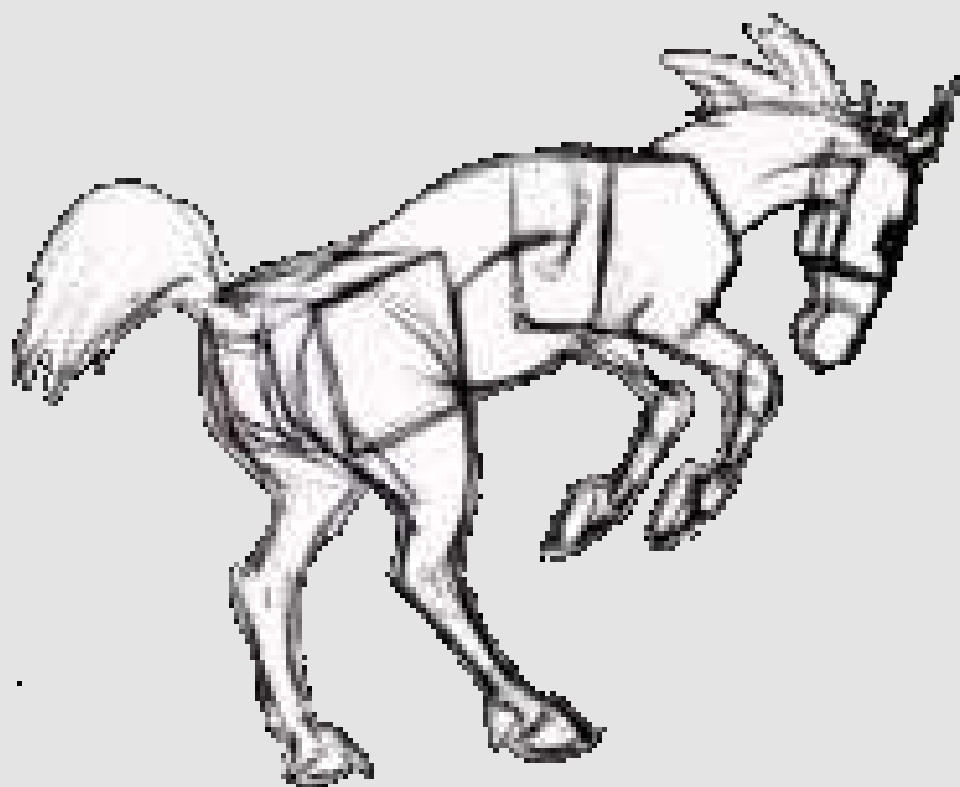
1



PLAY

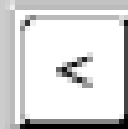
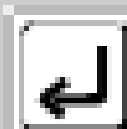
STOP

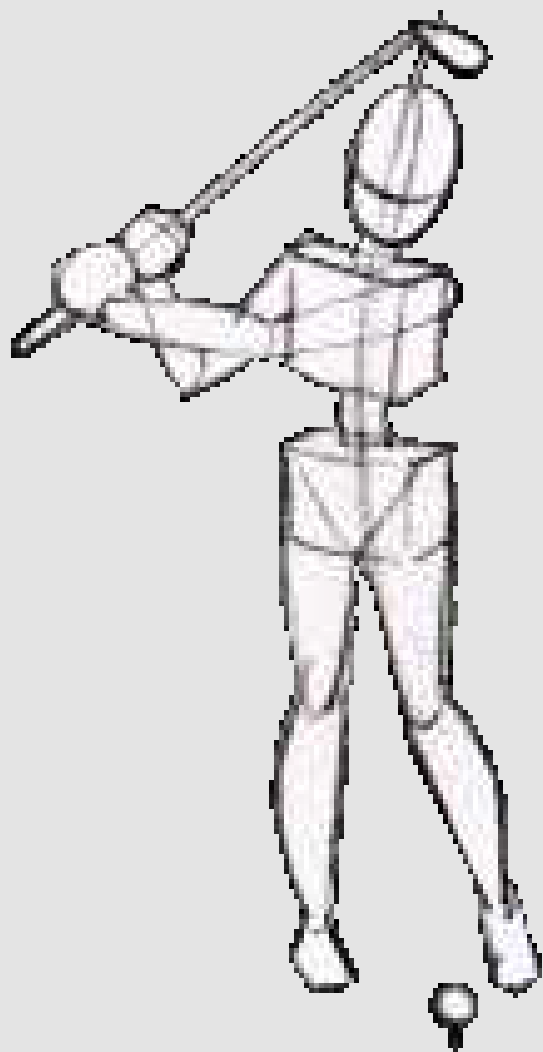




frame

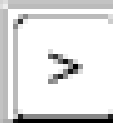
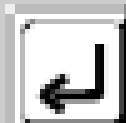
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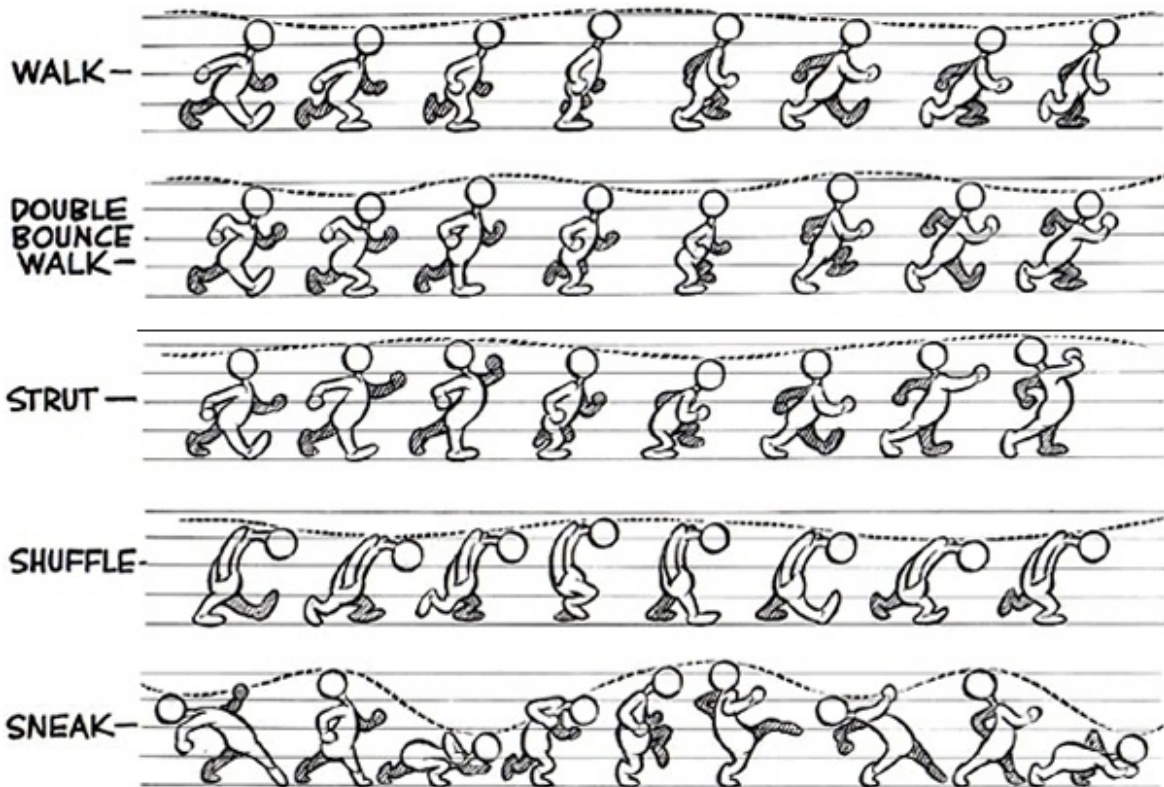
frame

1

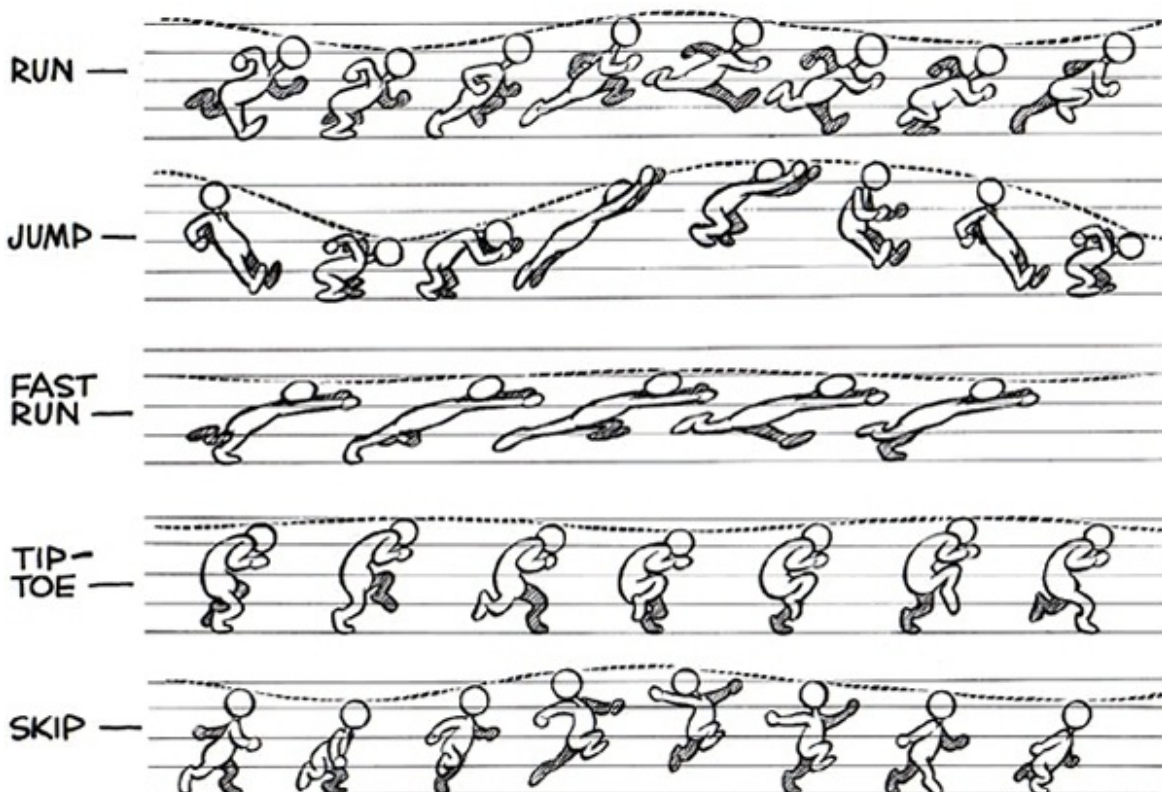


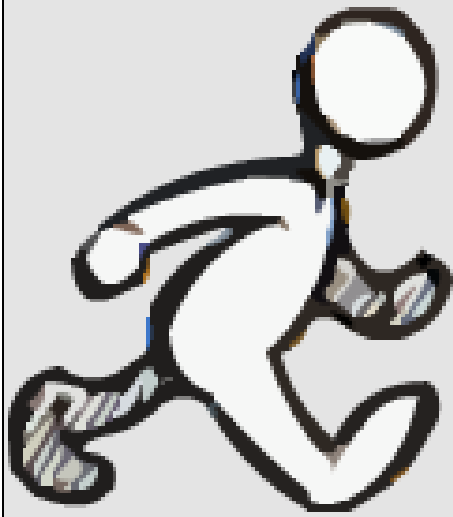
MOVEMENTS OF THE TWO-LEGGED FIGURE

A COMPLETE CYCLE FOR A TWO-LEGGED WALK IS TWO STEPS. DRAWINGS ARE MADE OF THE KEY POSITIONS OF THE STEPPING ACTION UNTIL THE NEXT DRAWING WOULD BE A REPEAT OF THE FIRST. THE DRAWINGS CAN BE USED OVER AND OVER AGAIN TO MAKE THE CHARACTER WALK AS FAR OR AS LONG AS DESIRED.



FOR A HALF-CYCLE, HALF OF THE ACTION (ONE STEP) CAN BE DRAWN, AND THEN THE HANDS, ARMS, LEGS, AND FEET CAN BE SWITCHED FROM SIDE TO SIDE, ESSENTIALLY CREATING A COMPLETE ACTION WITHOUT REDRAWING ALL OF THE BODY AND HEAD POSITIONS.





frame

1



PLAY

STOP



frame

1



PLAY

STOP



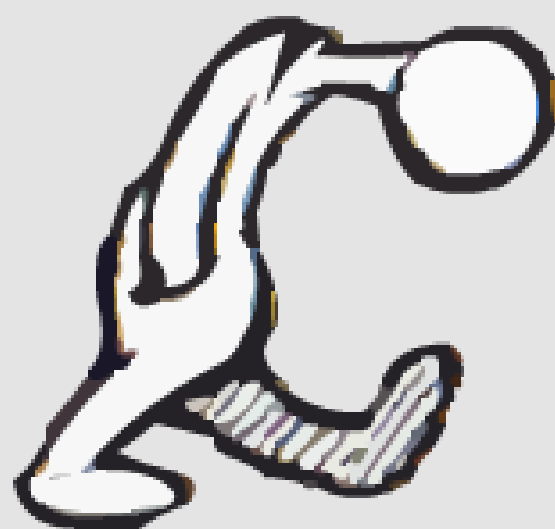


frame 1



PLAY

STOP



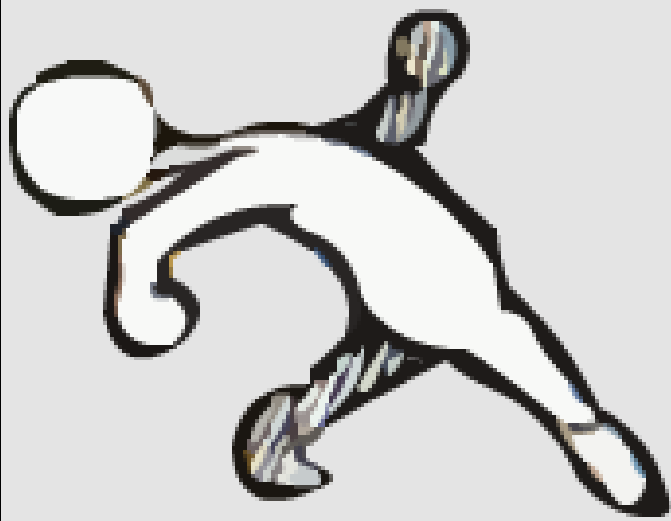
frame 1



PLAY

STOP





frame

1



PLAY

STOP



frame

1



PLAY

STOP





frame 1  **PLAY** **STOP**  



frame 1  **PLAY** **STOP**  



frame

1



PLAY

STOP



frame

1



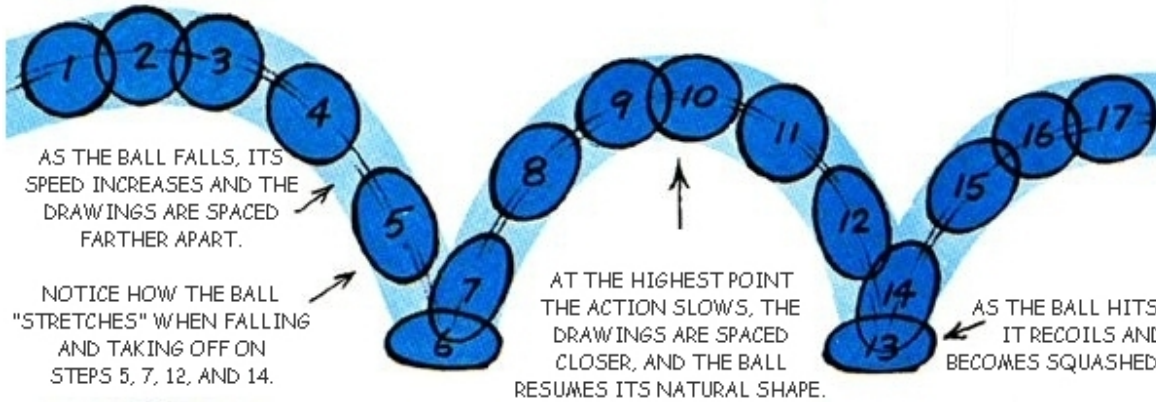
PLAY

STOP



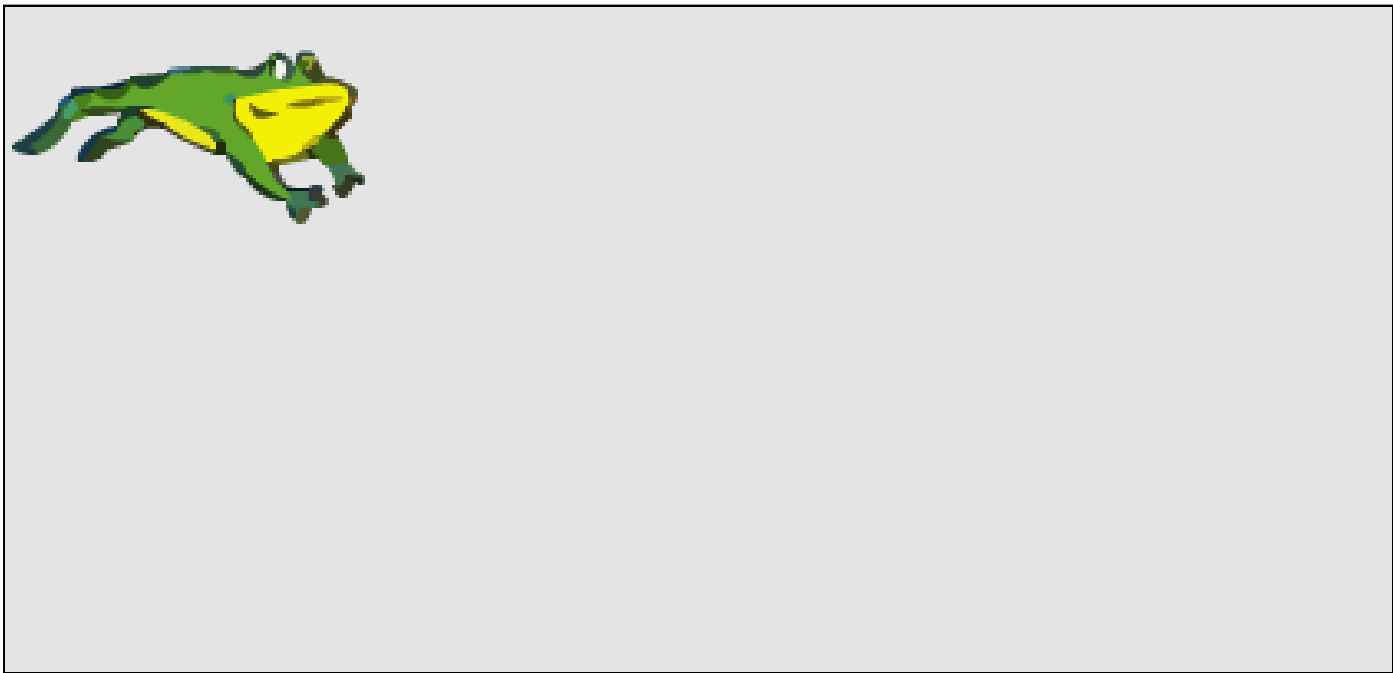
THE BASIC BOUNCING BALL ACTION

THE BALL FOLLOWS A DEFINITE PATH OF ACTION. STUDY THE SPACING OF THE BALL ALONG THIS PATH. NOTICE THE SIMILARITY OF THE BALL ACTION TO THE HOP AND JUMP BELOW.



frame 1

⏪ PLAY STOP ⏩



frame

1





frame

1

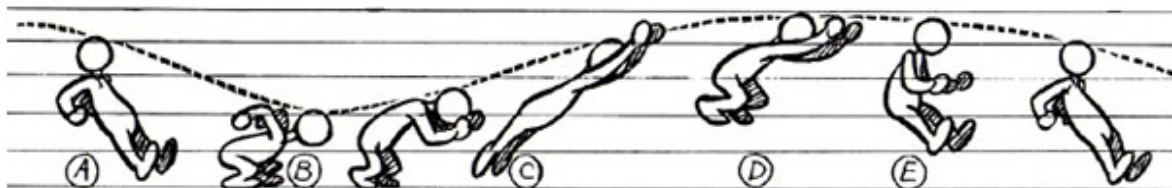


PLAY

STOP



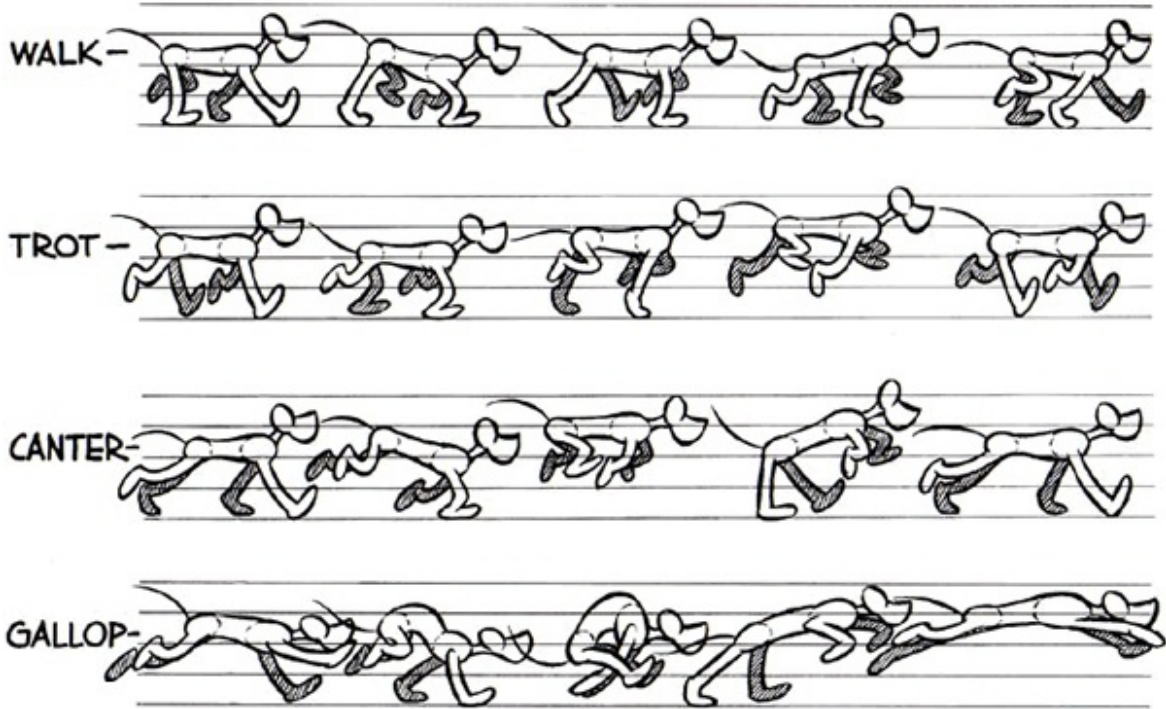
NOTICE THAT **A**, **C**, AND **E** HERE ARE LIKE 5, 7, 12, AND 14 ON THE BALL ABOVE WHEN THE CHARACTER STRETCHES. **B** IS LIKE THE RECOIL ON 6 AND 13 AND **D** IS LIKE THE NORMAL 2, 10, AND 17.



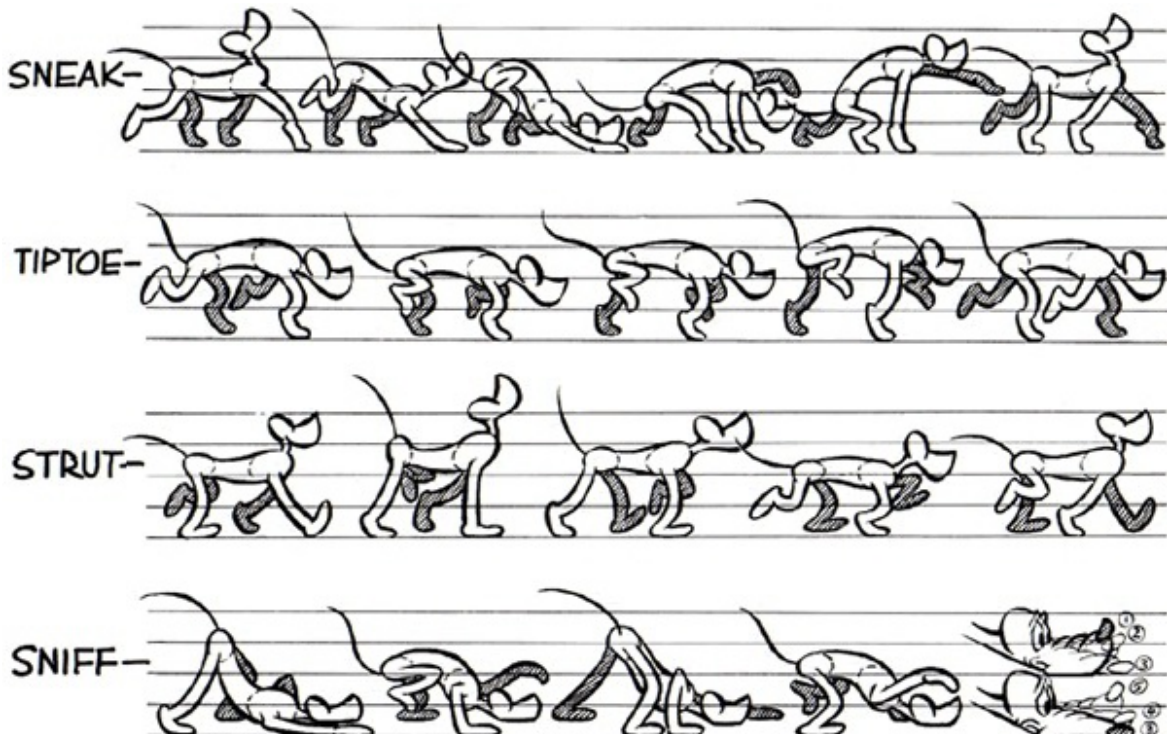
HERE THE ARMS ARE FLUNG UP SUDDENLY TO CREATE MOMENTUM HELPING THE JUMP.

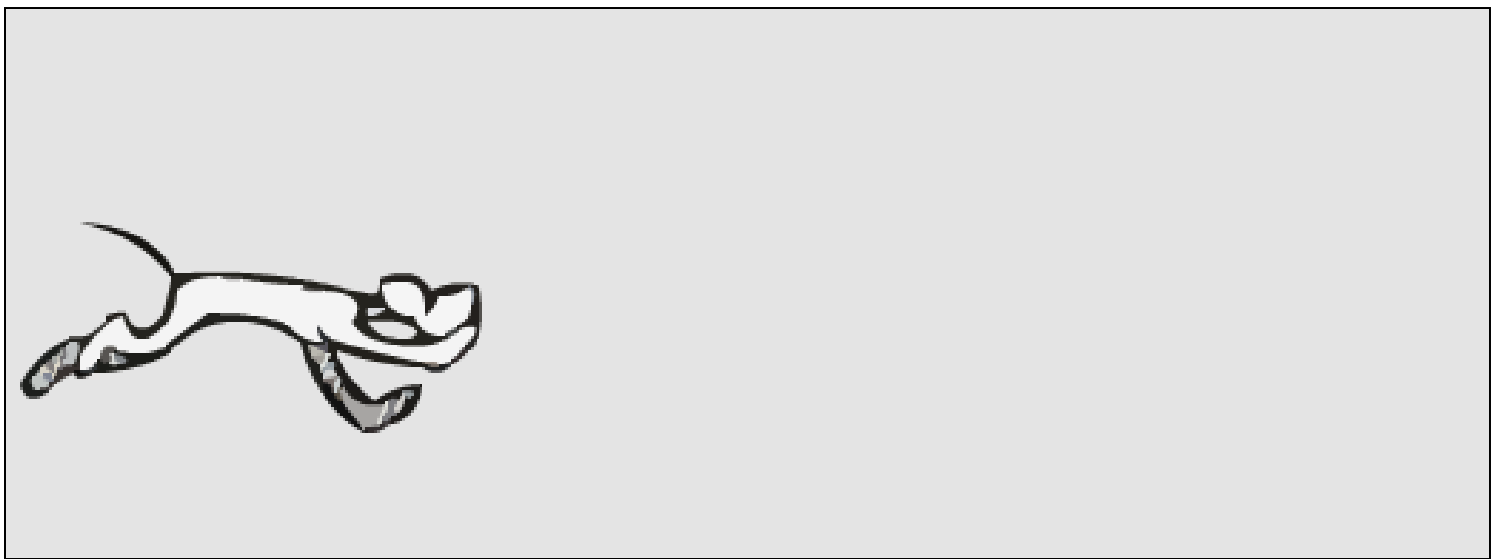
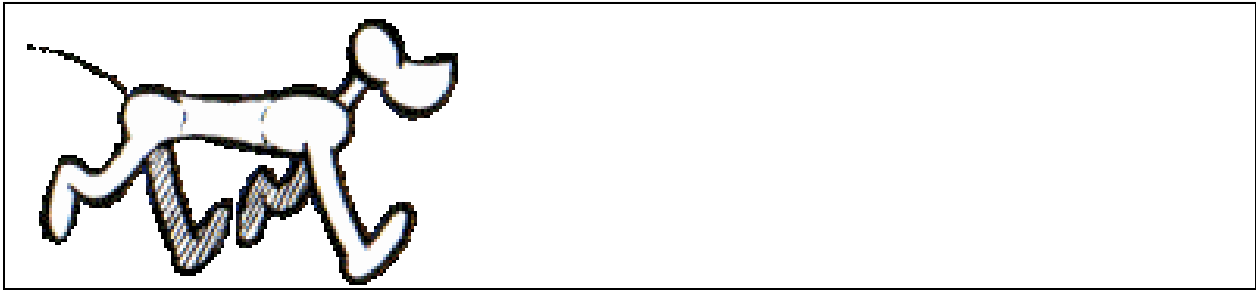
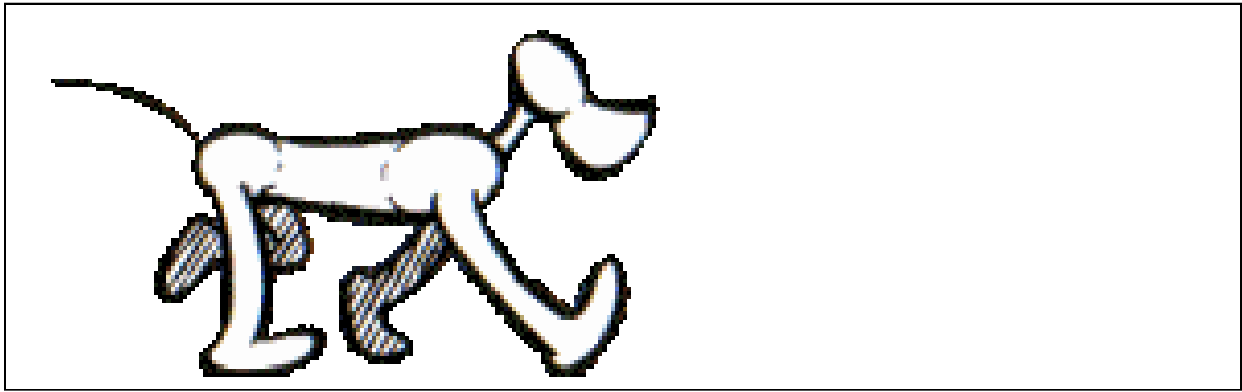
MOVEMENTS OF THE FOUR-LEGGED FIGURE

HERE IS A COMPARISON OF THE MAIN CYCLES OF FOUR-LEGGED MOVEMENT. SOME OF THEM ARE COMPLETE - OTHERS ARE HALF-CYCLES (YOU CAN DRAW THEM ON THE OPPOSITE FEET FOR THE REST OF THE CYCLE). STUDY THE DIFFERENCES IN THE EXAMPLES. THE WALK, TROT SNEAK, STRUT AND TIPTOE ARE HALF-CYCLES. THE GALLOP, CANTER, AND SNIFF ARE COMPLETE CYCLES.



IN-BETWEEN DRAWINGS ARE MADE BETWEEN THE KEY DRAWINGS AS TRANSITIONS TO CREATE A SMOOTH MOVEMENT OF THE FIGURE. YOU MUST DRAW ENOUGH IN-BETWEENS TO MAKE THE ACTION SMOOTH FOR THE SPECIFIC SPEED OF THE ACTION AND THE TIMING IN FILMING.





frame

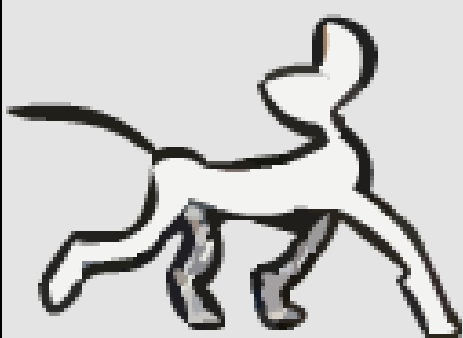
1



PLAY

STOP





frame

1



PLAY

STOP

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frame

1



PLAY

STOP

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frame

1



PLAY

STOP



frame

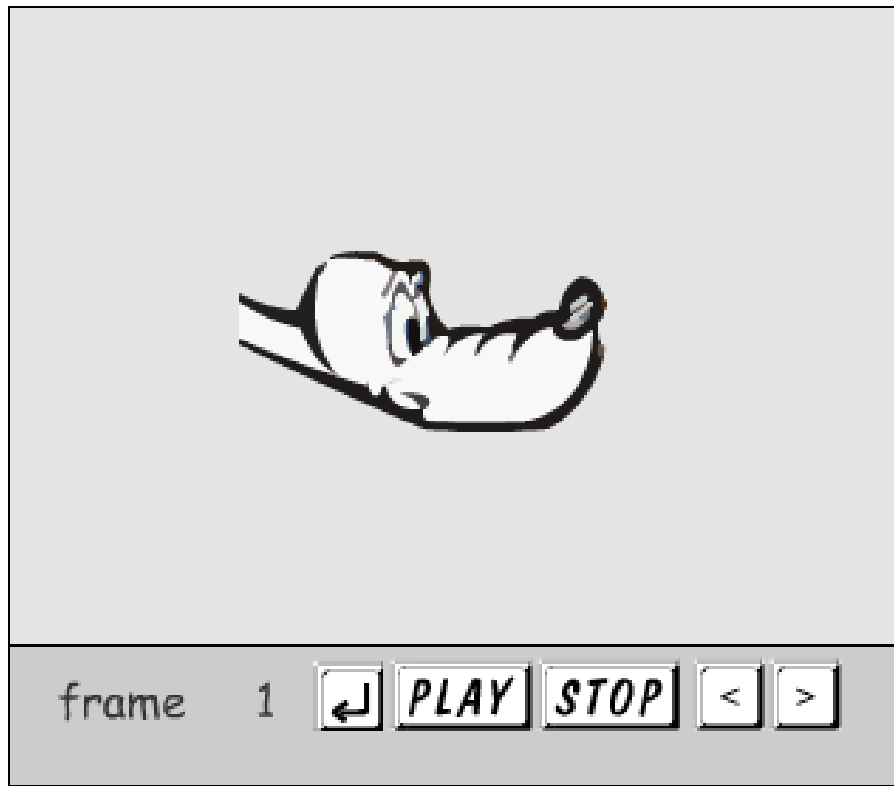
1



PLAY

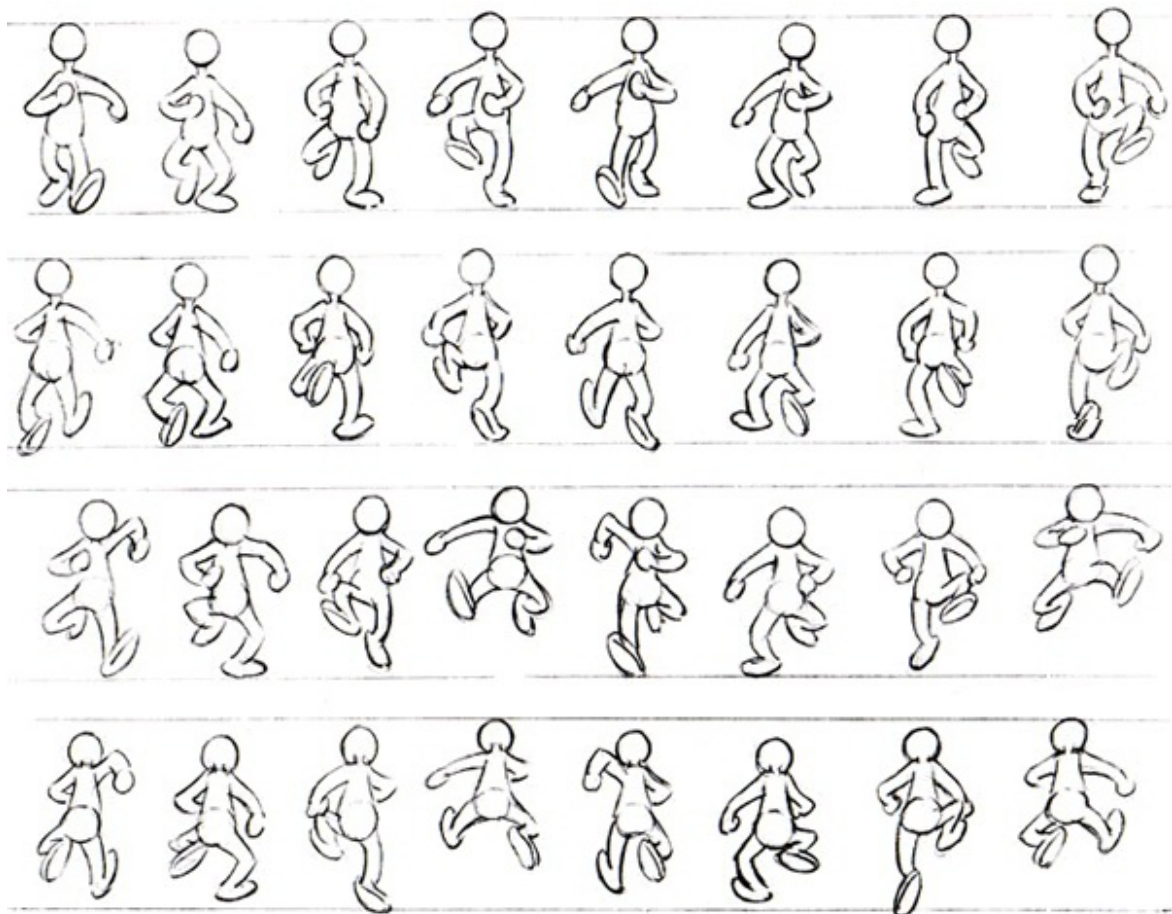
STOP






FRONT AND REAR VIEWS OF FIGURE MOVEMENTS

ALL ACTIONS TAKE ON DIFFERENT CHARACTERISTICS. HERE IS A WALK AND RUN FROM THE FRONT AND REAR VIEWS. ANIMATING FROM THESE ANGLES IS LIKE WATCHING A FOOTBALL GAME FROM THE END ZONE. STUDY THE ACTIONS BELOW, THEN USE THEM AS A GUIDE TO ANIMATE SOME OF THE CHARACTERS SHOWN IN





frame 1

⏪ PLAY STOP ⏩

A large white stick figure in a running pose, centered on a gray background. Below the figure is a control panel with the text "frame 1" and five buttons: a left arrow, "PLAY", "STOP", a left arrow, and a right arrow.



frame

1



PLAY

STOP



frame

1



PLAY

STOP





frame

1



PLAY

STOP

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>



frame

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PLAY

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PLAY

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frame

1



PLAY

STOP





frame

1



PLAY

STOP



THE DIFFERENCE BETWEEN WALK AND RUN

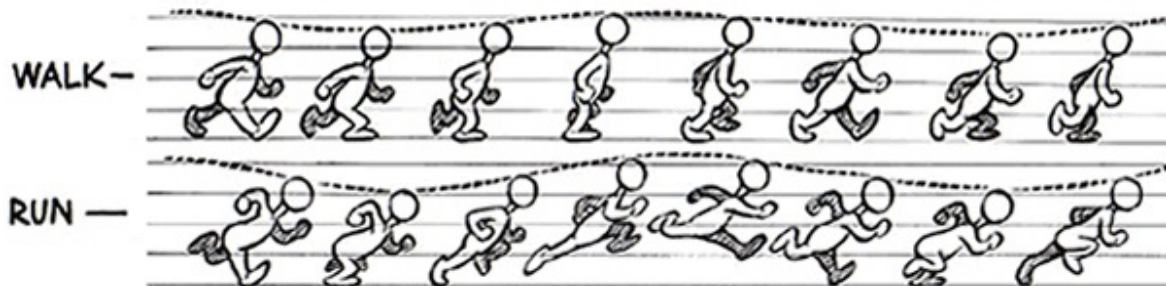


ABOVE ARE THE CONTACT DRAWINGS FROM (A) THE WALK, (B) THE RUN, AND (C) THE FAST RUN. THE CONTACT DRAWING IS THE DRAWING IN WHICH THE FOOT, AFTER BEING LIFTED, STRIKES THE GROUND. IN THE LAYOUT OF A RUN OR A WALK FOR ANIMATION, IT IS USUALLY THESE CONTACT DRAWINGS THAT ARE DETERMINED FIRST. THEY SET THE SPEED AND THE SIZE OF THE CHARACTER. THE REST OF THE ACTION IS THEN BUILT AROUND THEM.

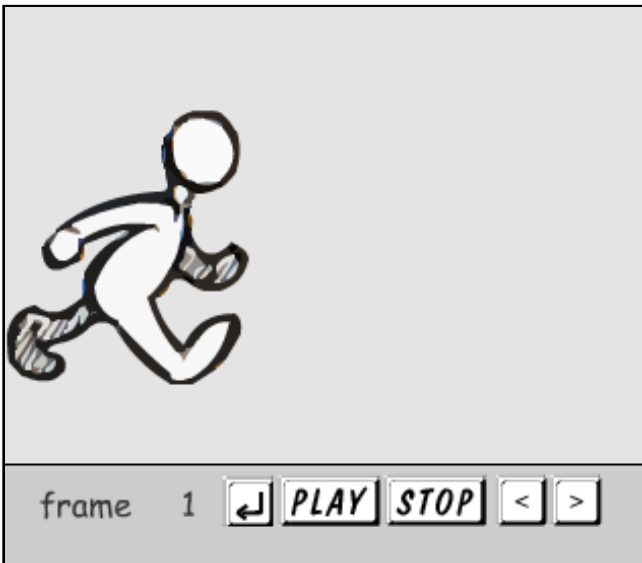
MORE THAN ANY OTHER SINGLE FACTOR, THE POSITION OF THE BACK FOOT ON THE CONTACT DRAWING DETERMINES THE SPEED. NOTICE THAT ON STEP A THE BACK FOOT IS STILL TOUCHING THE GROUND. ON STEP B THE BACK FOOT HAS LEFT THE GROUND. ON STEP C THE POSITION OF THE BACK FOOT IS EVEN HIGHER.

ON THE WALK, THE FRONT FOOT IS STRETCHED OUT AND THE BODY IS UPRIGHT, DENOTING SLOW SPEED. ON THE RUN, THE BODY LEANS FORWARD AND THE FRONT FOOT IS FARTHER BACK. ON THE FAST RUN, THE BODY LEANS FAR FORWARD, DENOTING SPEED, AND THE FRONT FOOT IS BACK UNDER THE BODY.

THE ARMS SWING CONVERSELY WITH THE LEGS. THE LEFT ARM SWINGS WITH THE RIGHT LEG AND VICE VERSA. THE ARMS SWING MORE VIOLENTLY IN THE RUN, BUT IN THE FAST RUN THE SWING OF THE ARMS WOULD BE TOO VIOLENT, THEY ARE MORE EFFECTIVE WHEN HELD STRAIGHT OUT IN A REACHING POSITION.



COMPARE THE ACTION OF THE WALK WITH THE RUN. IN THE WALK THE ARMS AND LEGS ARE STRETCHED OUT THE FARTHEST IN THE CONTACT DRAWING, HOWEVER, IN THE RUN THE STRETCH COMES WHEN THE FIGURE IS IN MIDAIR AT THE HIGH POINT OF THE ACTION.



THE WALK & THE RUN

(download large image)



THE WALK

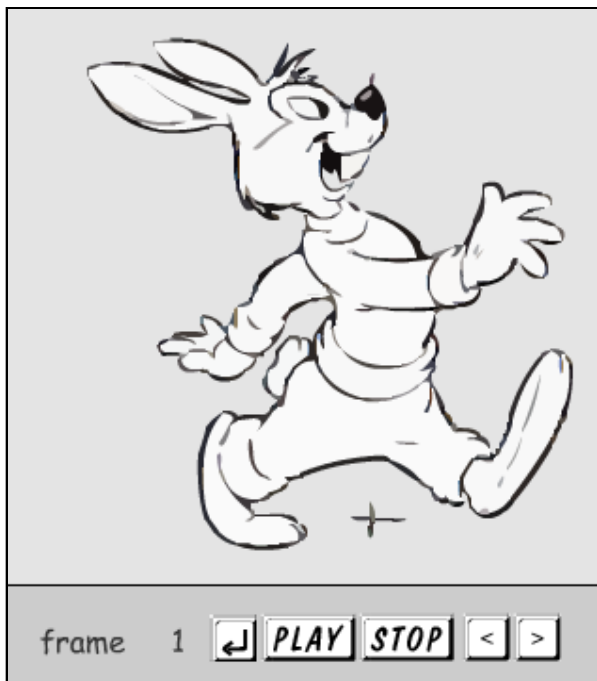
1. LEFT FOOT CONTACTS THE GROUND. 2. SINKS INTO RECOIL POSITION. 3. RIGHT FOOT LIFTS. STARTS COMING THROUGH FOR STEP. 4. HIGH POINT IN STEP, RIGHT FOOT RAISED. 5. RIGHT LEG STIFFENS INTO CONTACT POSITION. 6. RECOIL POSITION, LEG BENDS. 7. RABBIT RISES AS LEFT LEG LIFTS. 8. HIGH POSITION, #1 FOLLOWS THIS.

(download large image)



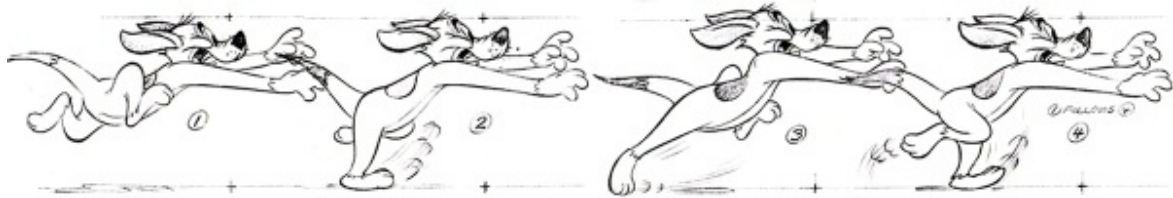
THE RUN

1. RIGHT FOOT DOWN IN CONTACT POSITION. 2. RIGHT FOOT TAKES WEIGHT OF BODY. 3. RIGHT FOOT PUSHES BODY OFF. 4. BODY AT HIGHEST POINT IN RUN. 5. LEFT FOOT REACHES FOR GROUND. 6. RECOIL WITH RIGHT FOOT COMING THROUGH. 7. LEFT FOOT STRETCHES FOR RECOIL. 8. ARMS AND LEGS STRETCH. #1 FOLLOWS THIS.



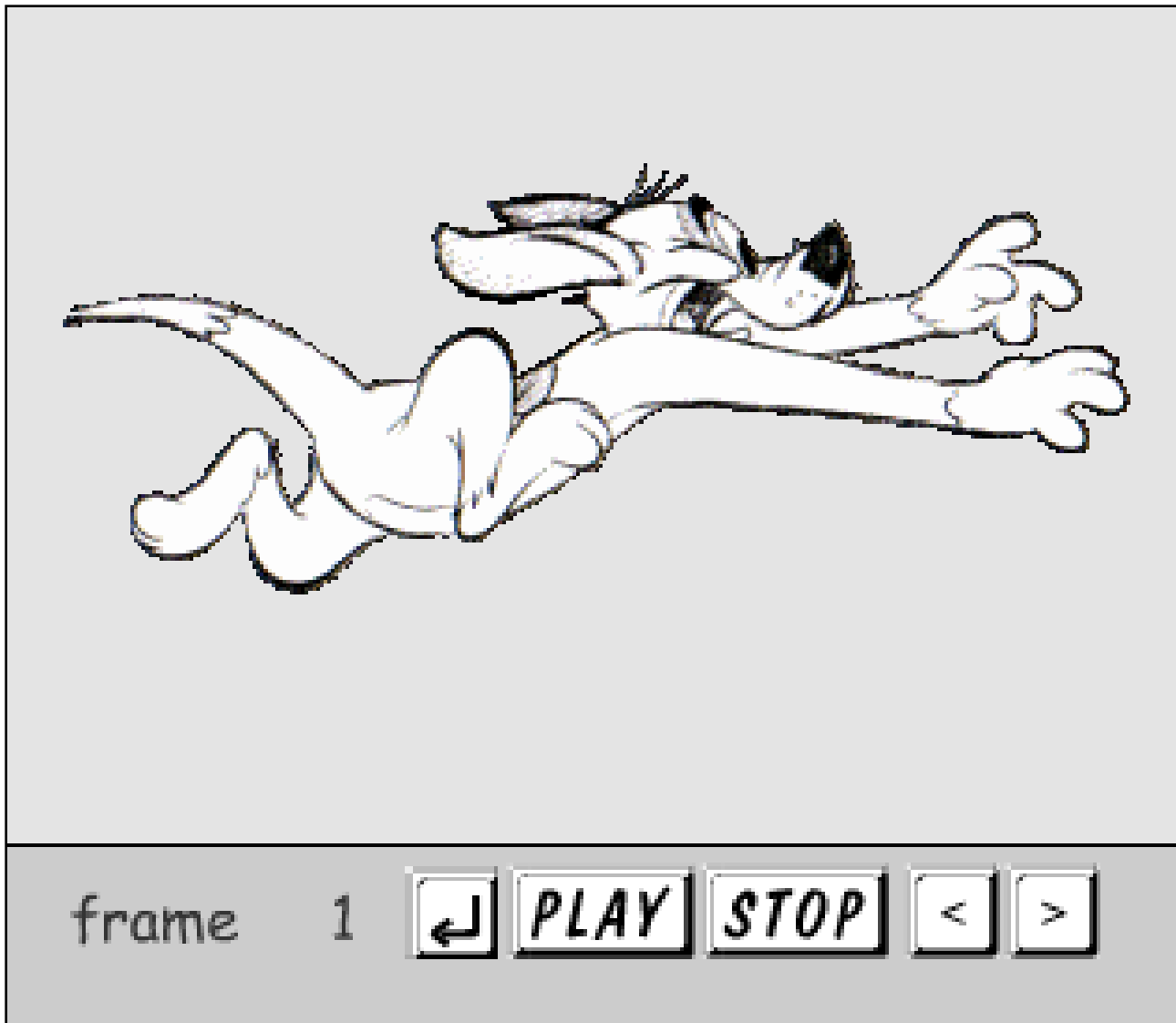
THE FAST RUN

(download large image)



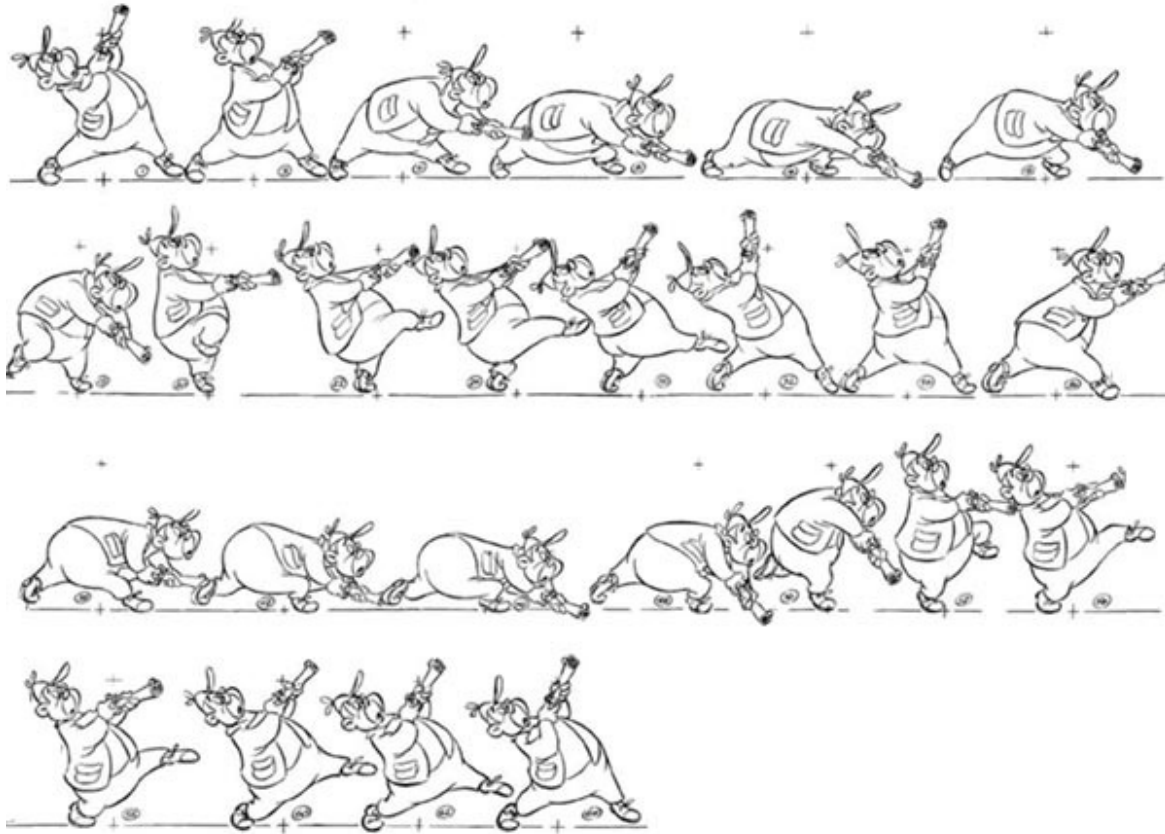
WHEN ANIMATING THE FAST RUN, TRY NOT TO HAVE TWO ACTION DRAWINGS IN THE SAME SILHOUETTE POSITION WITHIN ONE OR TWO FRAMES (EXPOSURES). THIS WOULD MAKE THE ACTION APPEAR MONOTONOUS AND MIGHT EVEN CREATE A FALSE ILLUSION AND A DIFFERENT EFFECT THAN THE ONE YOU ARE TRYING TO ACHIEVE (FOR EXAMPLE, THE WAGON WHEELS IN OLD WESTERN MOVIES THAT APPEAR TO BE GOING BACKWARDS. IN THE WALK AND THE RUN THERE ARE ENOUGH DRAWINGS BETWEEN SIMILAR SILHOUETTE POSITIONS - STEPS 1 AND 5 AT LEFT- SO THERE IS NO PROBLEM. BUT THAT IS NOT THE CASE WITH THIS FOUR-DRAWING CYCLE OF A FAST RUN. NOTICE THAT ALL FOOT ACTION DRAWINGS ARE VARIED: STEP 3 IS DIFFERENT THAN STEP 1 AND STEP 2 IS DIFFERENT THAN STEP 4. THERE IS A SINGLE CIRCULAR ACTION ON THE HEAD AND BODY INSTEAD OF A DOUBLE CIRCULAR ACTION AS IN THE WALK AND RUN. NOTICE HOW THE SPEED LINES AROUND THE FEET HELP ILLUSTRATE THE FAST ACTION.

THE CROSSES ABOVE AND BELOW THE DRAWINGS REPRESENT A FIXED POINT ON THE SCREEN. THEY ENSURE THE PROPER POSITIONING OF THE FIGURE. IF YOU TRACE THESE REPEATS, BE SURE THE CROSSES COINCIDE.

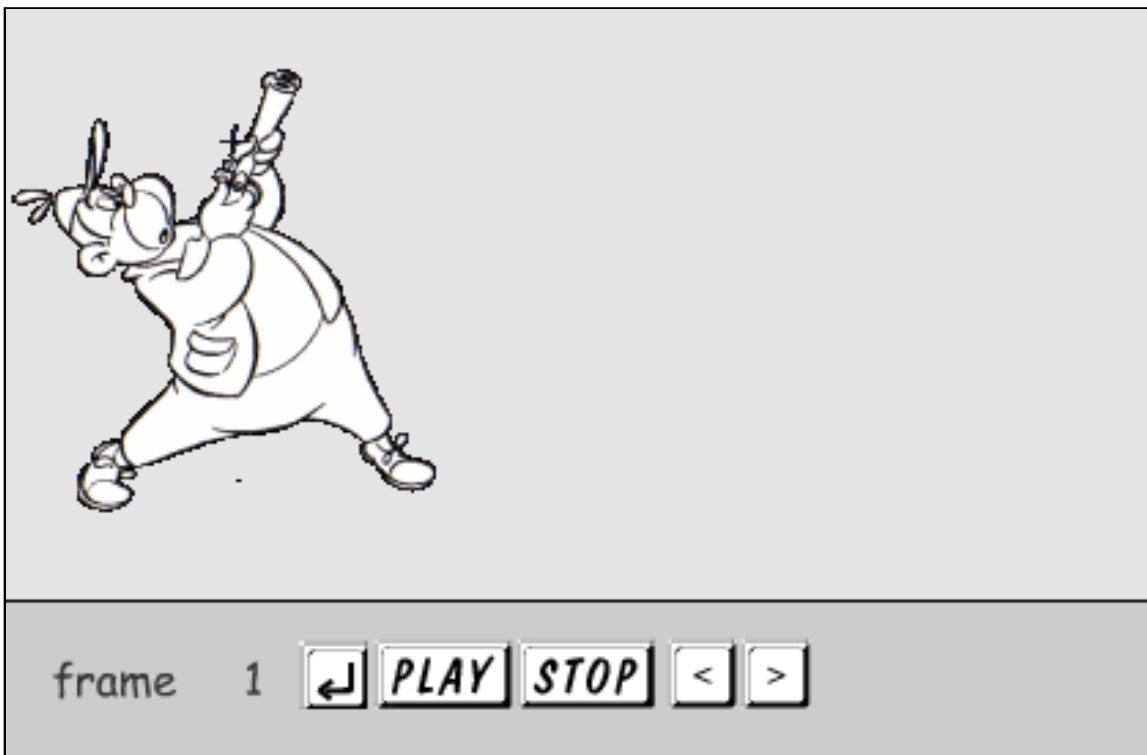


THE SNEAK

THESE ARE THE KEY DRAWINGS IN A 64-DRAWINGS SNEAK CYCLE. THE MISSING NUMBERS ARE IN-BETWEENS. DRAWING 1 FOLLOWS DRAWING 64. WHEN TRACING, BE SURE THE CROSSES ABOVE AND BELOW THE CHARACTER COINCIDE. THE SNEAK IS A WALK IN WHICH THE RECOIL (AFTER THE FOOT CONTACTS THE GROUND) IS EXAGGERATED AND THE SPEED OF THE FOOT COMING DOWN INTO THE CONTACT POSITION IS SLOWED. THIS CREATES THE ILLUSION OF STEALTH - THAT THE FEET ARE CAREFULLY PLACED TO PREVENT NOISE AND EVADE DETECTION.



NOT ALL SNEAKS ARE AS VIOLENT AS THIS ONE, BUT THEY ARE BASED ON THE SAME PRINCIPLE. THIS IS A SLOW SNEAK, FEWER IN-BETWEENS WILL SPEED IT UP.



THE SKIP

HERE ARE THE EXTREMES OF A 24-DRAWING SKIP CYCLE. THE MISSING DRAWINGS ARE IN-BETWEENS (DRAWINGS SPACED EVENLY BETWEEN THE EXTREMES). THE EXCEPTIONS ARE STEPS 12 AND 24. NOTICE THE CHARTS (CALLOUTS AND NUMBERS) EXPLAINING THE UNEVEN SPACING ON THESE DRAWINGS. INSTEAD OF BEING SPACED EVENLY BETWEEN STEPS 11 AND 13, IS 1/3 OF THE WAY (CLOSER TO 11), THE SAME THING HAPPENS WITH 24, WHICH IS 1/3 OF THE WAY BETWEEN STEPS 23 AND 1. DRAWING 24 COMPLETES THE CYCLE.

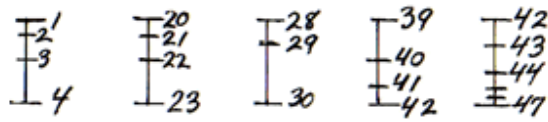


THE BODY AND THE HANDS IN THE SKIP ARE THE SAME AS IN THE RUN. THE DIFFERENCE IS IN THE ACTION OF THE FOOT THAT PUSHES THE BODY OFF THE GROUND AND THEN RAISES IN AN ARC AND CONTACTS THE GROUND FIRST. THE CROSS MARKS ABOVE AND BELOW EACH DRAWING ARE REGISTRATION MARKS. TRACE EACH DRAWING ON A SEPARATE SHEET OF PAPER-MAKING SURE THE CROSSES OVERLAP THEN FLIP THE DRAWINGS AND STUDY THE ACTION.



THE STRUT

BEGINNING WITH A POSE ON STEP 1, THE STRUT STEP STARTS ON 8, AND ENDS ON 36. THEN THE CHARACTER GOES INTO ANOTHER POSE ON 42. THE ACTION IS COMPLETE AS IS AND CANNOT BE HOOKED UP INTO A CYCLE. THE WALK IS SIMILAR TO THE STRUT, EXCEPT IN THE STRUT THE HIGH POINT IN THE ACTION IS WHEN THE FOOT CONTACTS THE GROUND, AND THE LOWEST POINT IS WHEN THE FOOT IS LIFTED. (IN THE WALK THIS IS REVERSED.) MISSING NUMBERS IN THIS ACTION ARE IN-BETWEENS, SOME ARE UNEVENLY SPACED. WHEN AN IN-BETWEEN IS UNEVENLY SPACED, A CHART IS MADE NEXT TO THE EXTREME SHOWING THE IN-BETWEENS POSITION. ALL OF THESE DRAWINGS ARE EXTREMES. BELOW ARE THE IN-BETWEEN CHARTS THAT WERE PUT ON THEM.



frame 1 ⏪ ▶ ⏸ ⏹ ⏩

FOUR-LEGGED ANIMALS



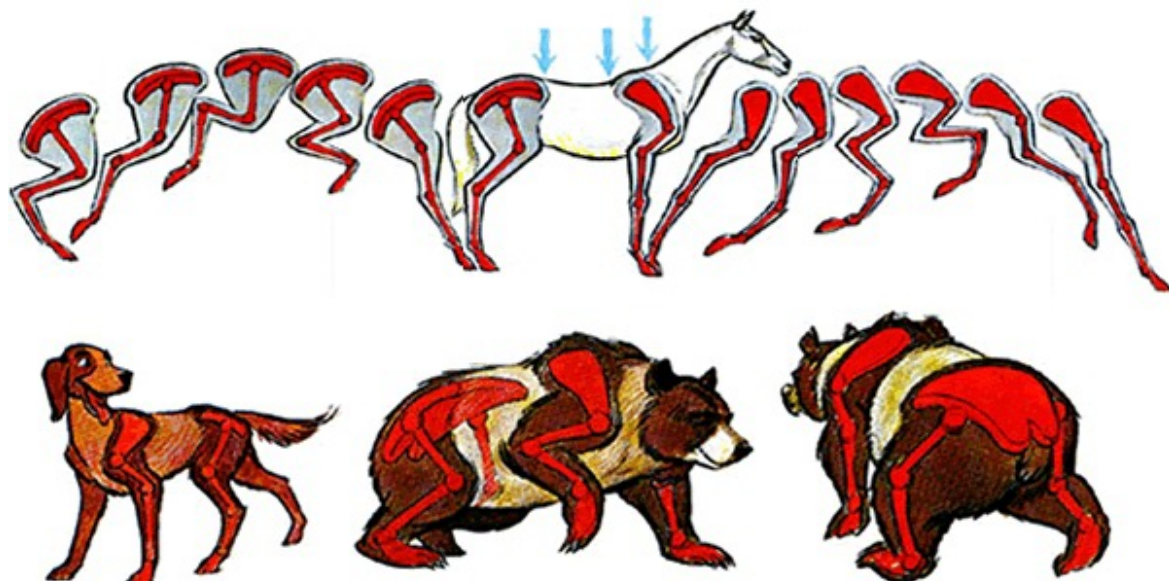
THIS SIMPLIFIED SKELETON DIVIDES THE ANIMALS BODY INTO THREE SECTIONS: THE FOREQUARTERS, THE BELLY, AND THE REAR QUARTERS. NOTICE THAT THE JOINTS OF THE SHOULDER BLADES AND THE HIP FORMS NEED TO BE DEFINED OR AT LEAST SUGGESTED IN YOUR DRAWINGS. AFTER LOCATING THESE PIVOT POINTS, PROCEED WITH YOUR DRAWING. MAKE THE LEGS IRREGULAR - NOT TOO PARALLEL.

AFTER ESTABLISHING THE BODY SHAPE AND SWEEP, SET A CENTERLINE OR BACKBONE, THEN MARK OFF THE THREE POINTS AS SHOWN ON THE HORSE BELOW ON THIS PAGE. FIT OR WEAVE THE PARTS TOGETHER WITH THE BODY RHYTHMS.

THE LEGS FOLD UP OF, STRETCH OUT WITH THE BODY BASED ON THE ACTION OF THE PIVOT POINTS IN THEIR PATHS OF ACTION. CHARACTERS WITH THESE ANATOMICAL ELEMENTS SEEM MORE REALISTIC.

DOGS AND DEER RUN WITH A ROTARY GALLOP IN WHICH THE OPPOSITE FRONT AND BACK LEGS LEAD, CATS, HORSES, AND MOST OTHER ANIMALS RUN WITH A TRANSVERSE GALLOP IN WHICH THE SAME FRONT AND BACK LEGS LEAD. IN ANY RUN EITHER THE LEFT OR THE RIGHT FRONT LEG CAN LEAD, SO THERE ARE TWO VERSIONS OF EVERY ANIMAL RUN IN THIS BOOK - SIMPLY REVERSE THE LEAD LEG.

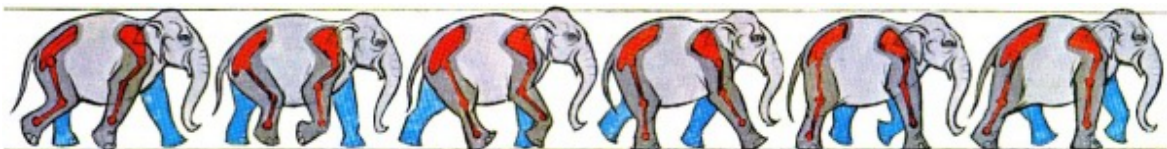
CONSTRUCTION AND MOVEMENT





MORE FOUR-LEGGED ANIMALS

WALK AND RUN CYCLES





frame

1



PLAY

STOP



frame

1



PLAY

STOP





frame

1



PLAY

STOP



frame

1



PLAY

STOP





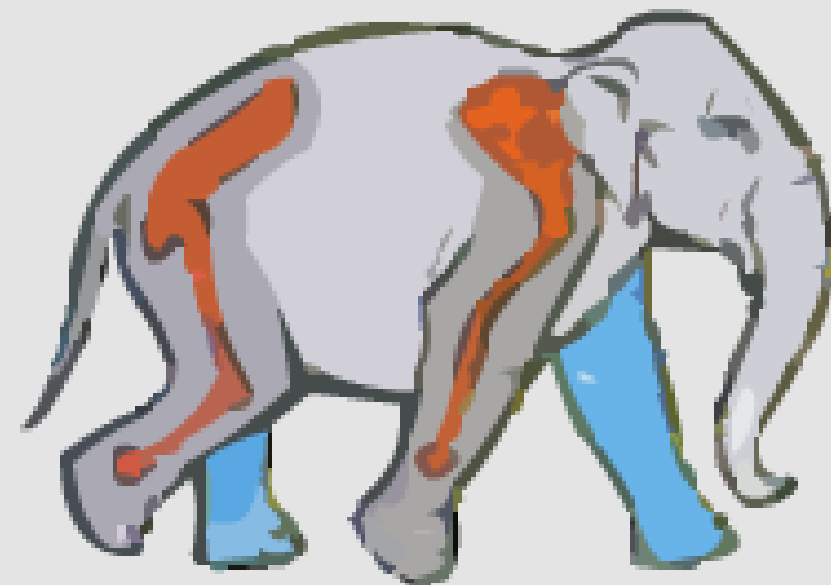
frame

1



PLAY

STOP



frame

1



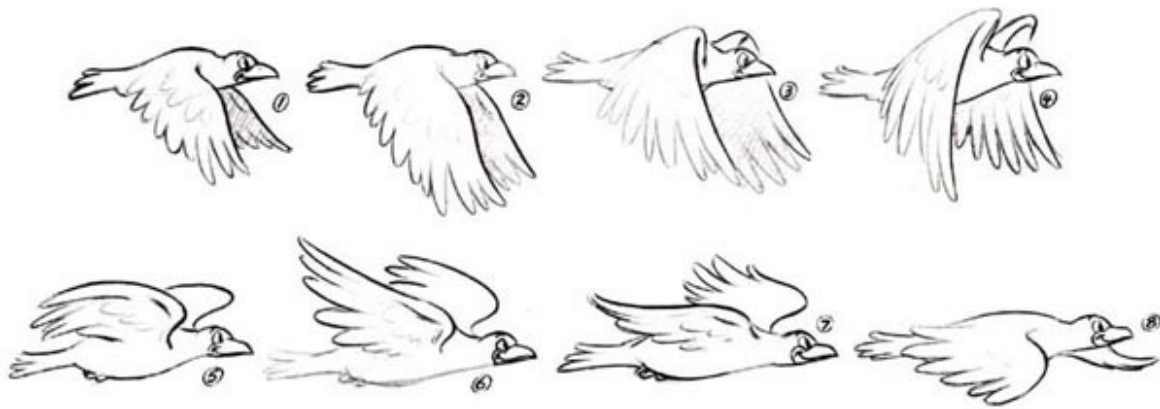
PLAY

STOP

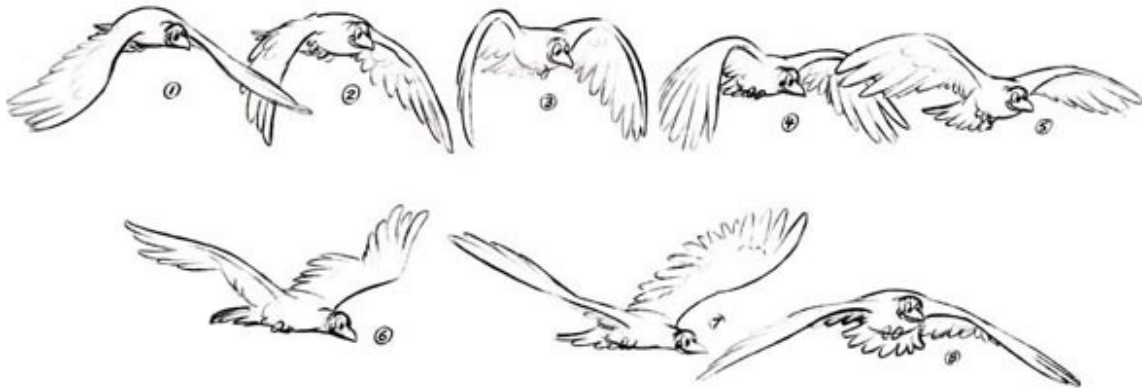


THE FLIGHT OF BIRDS

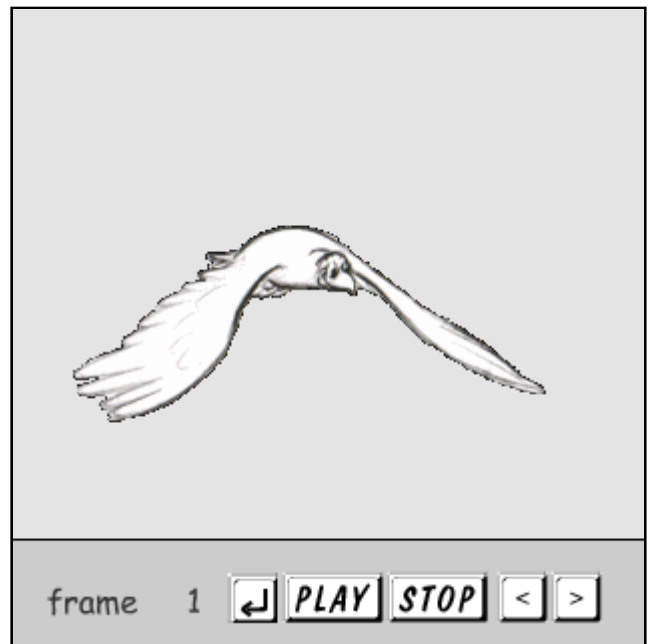
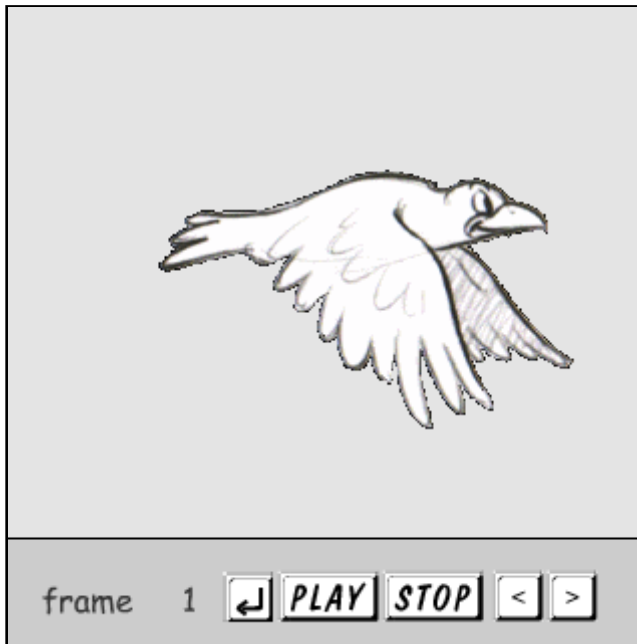
(download large image)



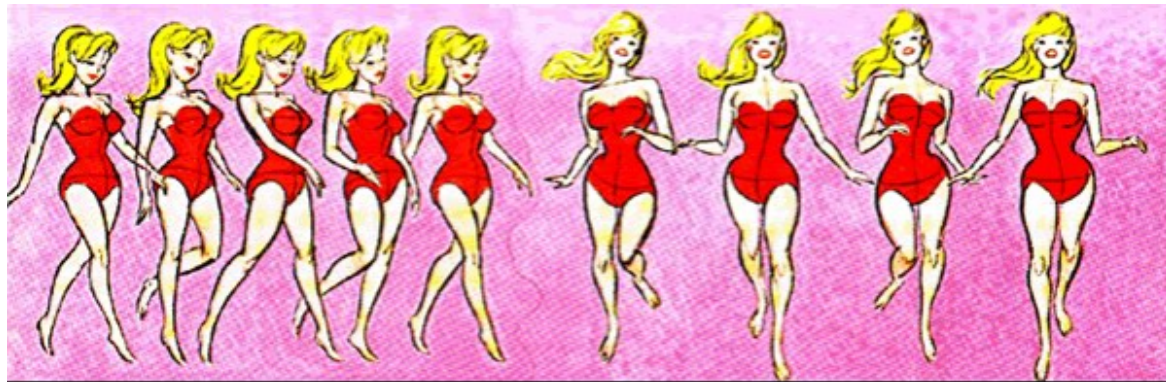
HERE IS A CYCLE OF A BIRD FLYING FROM BOTH THE FRONT AND THE SIDE VIEWS. DRAWING 5 IS FOLLOWED BY DRAWING 1. DRAWING 1 HERE IS THE SAME WING POSITION AS DRAWING 1 BELOW ON THIS PAGE. NOTICE HOW THE WINGS FOLD UP AS THEY RISE IN DRAWINGS 2, 3, AND 4. THIS PART OF THE ACTION IS SLOWER SO THERE ARE MORE DRAWINGS TO IT. CONSEQUENTLY YOU WILL SEE IT LONGER. IN DRAWINGS 5, 6, AND 7, THE WINGS ENLARGE TO CATCH MORE AIR. THEN IN DRAWING 8 THEY QUICKLY COME DOWN WIDE OPEN (ONE DRAWING) TO GIVE THE BIRD THE PUSH THAT CARRIES IT THROUGH THE AIR.



(NOT ALL BIRD WING ACTION IS AS VIOLENT AS THIS, BUT THE ACTION ILLUSTRATED HERE CAN BE MODIFIED FOR SMALLER BIRDS.)



CYCLES IN COLOR

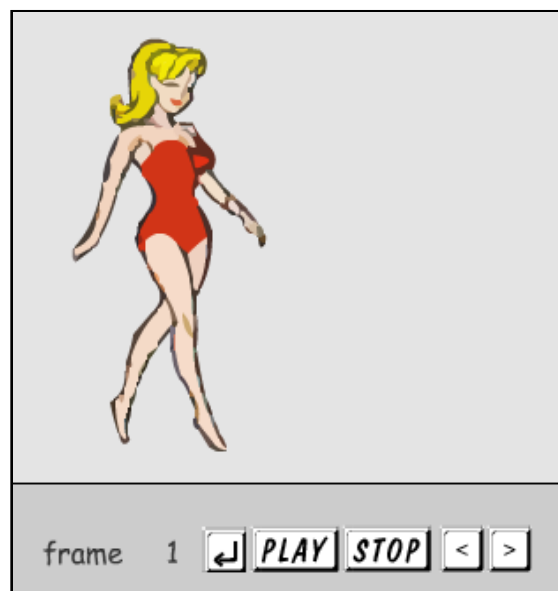
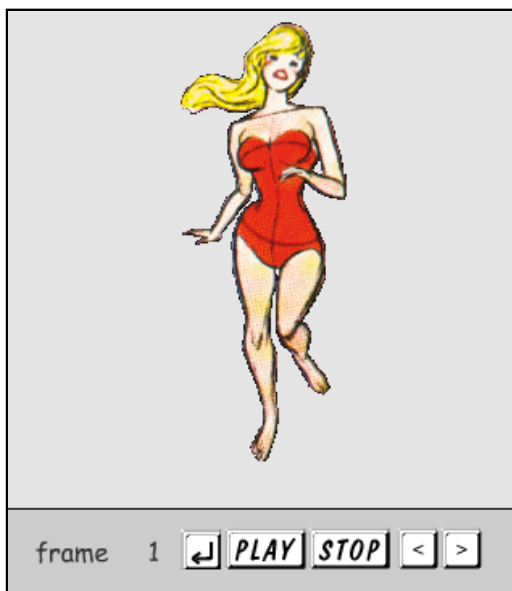


WALK

- AS LEG LIFTS, HIPS TILT. CHEST TILTS OTHER WAY TO BALANCE.

RUN

- ARMS LIFT AND SWING TO BALANCE HIP TILT AND LEG ACTION.



TROT

- OPPOSITE LEGS LIFT AND CONTACT TOGETHER IN SYNC. IN A PACE ACTION SEE THE SAME FRONT AND BACK LEGS WORK TOGETHER.



CANTER

- THE BODY TILTS WITH A RISING AND FALLING ACTION THAT IS SIMILAR TO A CHILDREN'S SEESAW, CAUSING RIDER TO STAND.



TRANSVERSE GALLOP

- LEFT LEGS CAN LEAD TOO. THE SAME LEGS LEAD. UNLIKE DOG AND DEER THAT GALLOP WITH OPPOSITE LEGS LEADING.



frame 1



frame 1



frame 1



frame

1



PLAY

STOP



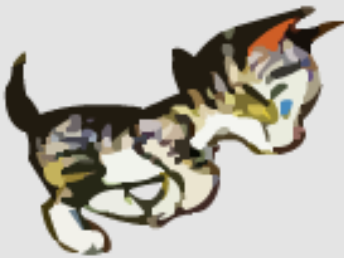
FOUR-LEGGED WALK

- THE BACK LEGS ARE ONE HALF STEP AHEAD OF THE FRONT LEGS. THIS COMPLETE CYCLE IS TWO STEPS.



TRANSVERSE GALLOP

- BOTH LEFT LEGS LEAD HERE. CAT ALSO GALLOPS LIKE HORSE (SEE LEFT) WITH RIGHT LEGS LEADING. JUST REVERSE LEGS.



frame

1



PLAY

STOP





COCKY BOUNCE-WALK (ARMS SWINGING)

- FIRST DRAWING IS CONTACT, NEXT IS RECOIL, THEN A LIFT, THEN A HIGH "FLOAT", AND THEN BACK TO CONTACT (OPPOSITE FOOT).



frame

1



PLAY

STOP





RUN

- SILHOUETTE OF RUNNER FROM LIVE ACTION FILM REVEALS CONCAVE ARC KICK ON FOOT BEFORE CONTACT.



frame

1



PLAY

STOP

