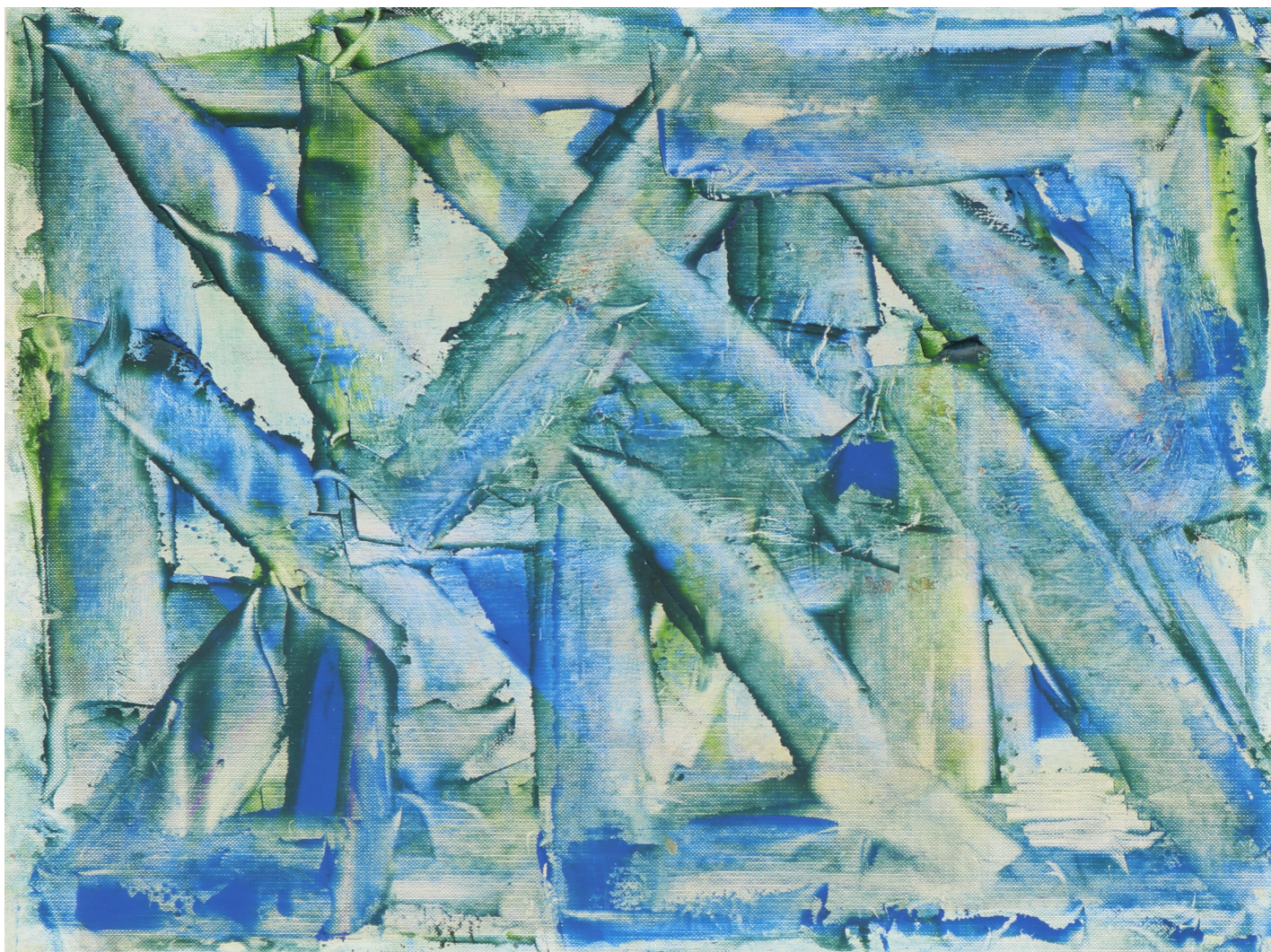


# SCIENCE

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*De muziek van "Mathematics" gaat uit van de wiskundige stelling van Pythagoras. Het ontwerp sluit hierbij aan met een compositie van rechthoekige driehoeken. Pythagoras was overigens een enthousiast bespeler van de lier en deed uitgebreid onderzoek naar het verband tussen muziek en wiskunde.*

### **Science - Mathematics**

Science is een compositie van Verklanking, een samenwerkingsverband tussen componist Vincent Cox, wetenschapper Tim Leufkens en dirigent Frank Marx. Het muziekstuk stelt de vraag 'wat maakt een mens een mens?' centraal. Aan de hand van de verklanking van vier wetenschappen, namelijk natuurkunde, biologie, wiskunde en psychologie wordt gezocht naar een antwoord op de vraag. De compositie heeft naast de vier wetenschappen een introducerend deel, de hypothese, en een afsluitend deel, de falsificatie. De delen heten in volgorde van verschijnen 'Hypothesis', 'Physics', 'Biology', 'Mathematics', 'Psychology' en 'Falsifiability'.

In 'Mathematics' is de priemgetallentheorie gebruikt.

De reeks van getallen is zelfs doorgevoerd in de maatvoering van dit deel. Verwacht dus geen regelmatige patronen. Pythagoras is de wetenschapper die is verklankt. Bekend vanwege zijn theorie die een verband geeft tussen de lengten van de zijden van een rechthoekige driehoek, wordt in dit deel dan ook gespeeld met de simpelste vorm van de theorie:  $3^2 + 4^2 = 5^2$ . De stelling vindt u terug in de ritmiek.

*Science logo: Roy Wagemans  
Projectie: Harry van Meurs*

# SCIENCE MATHEMATICS

Vincent Cox

## KNOWLEDGE

**♩=132 Molto ritmico**  
*Damp with pedal or cloth  
thin metal beaters*

*very hard mallets, senza pedal (x= with back of mallets)*

*with brushes*

*Damp with hard rubb*

*p sc*

*k of mallets)*

*v*

**Instrument List:**

- Glockenspiel 1
- Vibraphone 1
- Crotales 1
- Toydrum
- Small Metal Pipe
- 13 Glassbowl
- Bass Drum
- Bongo/Conga
- Large Metal Pipe
- Suspended Cymbal
- Bass Drum
- Bongo/Conga
- Small Tub
- Kuniko Instrument wit staves
- Bass Dum.
- Bongo/Conga
- Sample
- Soprano
- Mezzo-soprano
- Alto
- Tenor
- Baritone
- Bass
- Glockenspiel 2
- Vibraphone 2
- Crotales 2
- 2 High Woodblocks
- Paint/Beer Cans
- Small Metal Pipe
- 3 Dobaci
- High Temple Block
- Log Drum
- Large Metal Pipe
- Chinese Cymbr
- Medium Temple Blo
- Log Dr
- Large Tub
- Kuniko Instrument with strings
- Low Temple block
- Log Drum

**Dynamic Markings:** *f*, *mf dim.*, *pp*, *f dim.*, *p*, *pp*, *f dim.*, *pp*, *mf dim.*, *pp*, *mf dim.*, *pp*, *f dim.*, *pp*, *f dim.*, *pp*

The musical score is arranged in a vertical stack of staves. The top section includes Glsp.1, Vib.1, Crost.1, Toy Drum, Sml.Mtl.Pipe, 13 Glassbowl, B.Dr., Bng/Cng, Lrg.Mtl.Pipe, S.Cymb., B.Dr., Bng/Cng, Sml.Tub., Kuniko Instr., Staves, B.Dr., Bng/Cng, Sample, S., M-S., A., T., Bar., and B. The bottom section includes Glsp.2, Vib.2, Crost.2, High W.Bcks., Cans, Tri Lrg. T.Bls., Sml.Mtl.Pipe Dobaci, High T.Blck. L.Dr., Lrg.Mtl.Pipe Chin.Cymb., Med. T.Bl. L.Dr., Lrg.Tub., Kuniko Instrument, 5 Strings, Low T.Blck. L.Dr.

Key musical elements include dynamic markings such as *f dim.*, *pp*, *mf dim.*, *pp*, *mp dim.*, and *pp*. Performance instructions include *ath hand* and *hard rubber mallets, damp with hand*. The score features complex rhythmic patterns, particularly in the Toy Drum and Vib.1 parts.

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Glspl.1 *f*

Vib.1 *mf dim.* *pp* *mf dim.* *pp*

Crot.1 *mp dim.* *pp* *mp dim.* *pp*

Toy Drum  
Tri.sml  
T.Bls. *f dim.* *pp* *f dim.*

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glspl.2 *p*

Vib.2 *mf dim.* *pp* *mf dim.* *pp* *mf dim.* *pp*

Crot.2 *m* *pp* *mp dim.* *pp* *mp dim.* *pp*

High W.Bcks. *f dim.* *pp* *f dim.* *pp* *f dim.*

Cans  
Tri Lrg.  
T.Bls. *f dim.* *pp* *f dim.* *pp* *f dim.*

Sml.Mtl.Pipe  
Dobaci  
High T.Bck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Bck.  
L.Dr.

SCIENCE - MATHEMATICS

Glsp.1

Vib.1

Crot.1

*f*

*mf dim.*

*pp*

*mf*

*pp*

*mf dim.*

*mp dim.*

*pp*

*pp*

*mp dim.*

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

*pp*

*f dim.*

Metal Pipe, high sound, with triangle beater

*mp dim.*

*f*

*im.*

*pp*

*f dim.*

*pp*

*mp dim.*

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2

High W.Bcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci

High T.Bck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Bck.  
L.Dr.

*mp dim.*

*pp*

*mf dim.*

*pp*

*mp dim.*

*pp*

*mp dim.*

*pp*

*m.*

*pp*

*f dim.*

*pp*

*f dim.*

*mp dim.*

*pp*

*mp dim.*

*pp*

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Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*pp* *mf dim.* *pp* *mf dim.*

*pp* *mp dim.* *pp* *mp dim.*

*pp* *f dim.* *pp* *f dim.*

*pp* *mp dim.* *mp dim.*

*pp* *f dim.* *pp* *f dim.*

*mp dim.* *mp dim.* *pp* *mp dim.*

*lim.* *pp* *mp dim.* *pp* *mp dim.*

*pp* *f dim.* *mp dim.*

Metal Pipe, low sound, with triangle beater

Metal Pipe, low sound, with rubber mallet

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Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbwl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2

High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*pp* *mf dim.* *pp*

*pp* *mp dim.* *pf*

*pp* *f dim.* *pp*

*pp* *mp dim.* *mp dim.*

*pp* *mp dim.* *n.* *pp*

*pp* *mf dim.* *pp* *mf dim.*

*mp dim.* *pp* *mp dim.*

*f dim.* *pp* *f dim.* *pp*

*pp* *mp dim.* *pp* *mp dim.*

*mp dim.* *pp* *mp dim.* *pp*

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4

x= with back of mallet

30

Glspl.1 *f* *mf*

Vib.1 *pp mf dim. pp pp*

Crot.1 *pp mp dim. pp*

Toy Drum  
Tri.sml  
T.Bls. *f dim.*

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng *pp mp dim. pp*

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng *mp dim. pp mp dim. pp*

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng *dim. pp f dim.*  
All Tub, play with brushes

Sample

S.

M-S.

A.

T.

Bar.

B.

Glspl.2 *p* *mf dim.* *x= with back of mallet*

Vib.2 *pp m pp pp*

Crot.2  
High W.Blcks. *pp pp mp dim.*

Cans  
Tri.Lrg.  
T.Bls. *f dim. pp f dim.*

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr. *pp mp dim.*

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr. *pp mp dim.*

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr. *f dim. pp*  
Large Tub, play with brushes

SCIENCE - MATHEMATICS

35

Glsp.1 *pp* *mf dim.* *pp* *mf dim.*

Vib.1 *f* *mf dim.*

Crot.1 *pp* *mp dim.* *mp dim.*

Toy Drum  
Tri.sml  
T.Bls. *pp* *f dim.* *f dim.*

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng *pp* *mp dim.* *mp dim.*

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng *mp dim.* *mp dim.*

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng *pp* *f* *pp*

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2 *pp* *mf dim.* *pp* *mf dim.*

Vib.2 *pp* *pp* *pp*

Crot.2  
High W.Blcks. *mp dim.* *pp* *mp dim.*

Cans  
Tri Lrg.  
T.Bls. *f dim.* *pp* *f dim.*

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr. *pp* *mp dim.* *pp* *mp dim.*

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr. *mp dim.* *pp* *mp dim.*

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr. *f dim.* *pp* *f dim.*

SCIENCE - MATHEMATICS

39

Glspl.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glspl.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

SCIENCE - MATHEMATICS

44

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*p*

*pp*

*dim.*

*pp*

*pp*

47

Glsp.1 *pp*

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls. *fade out*

Sml.Mtl.Pipe  
13 Glassbowls  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls. *fade out*

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

Glassbowls, *freely, very gently*

Suspended Cymbal, *con arco*

with staves, *freely, very gently*

Crotales, *con arco* *pp*

Dobaci, *rubber mallets* *p*

Kuniko Instrument with strings *p sfz*

*pp poco cresc.*

*pp poco cresc.*

51

Glsp.1

Vib.1 *gradually with pedal*

Crot.1 *simile*

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng

Sample  
START SAMPLE with prime numbers

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2 *gradually*

Crot.2

High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*Suspended f*

*l.v.*

*marco*

*p*

*mf*

*sfz*

*5*

*sfz*

*3*

*3*

*3*

53

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*p* *mf* *sfz* *lv*

7

54

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

SCIENCE - MATHEMATICS



55

Glsp.1

Vib.1 *fade out*

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2 *fade ou*

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*p* *mf* *l.v.* *sfz*

13

more rhythmic again ( in )

with medium mallets

with medium rubber mallets

*poco a poco cresc.*

Triangle Small

Suspended Cymbal, with mallets

with medium m

with medium rubbr

simile

Chinese Cymbal, with mallets

Voice; start counting prime numbers  
2, 3, 5, 7, 11, 13. Start whispering, gradually crescendo into normal voice

Voice; start counting prime numbers  
2, 3, 5, 7, 11, 13. Start whispering, gradually crescendo into normal voice

Voice; start counting prime numbers  
2, 3, 5, 7, 11, 13. Start whispering, gradually crescendo into normal

Voice; start counting prime numbers  
2, 3, 5, 7, 11, 13. Start whispering, gradually cres

Voice; start counting prime numbers  
2, 3, 5, 7, 11, 13. Start whispering, gradu

*sfz*

*sfz*

*sfz*

59

Glsp.1 *pp* *f*  
 Vib.1 *pp* *f*  
 Crot.1  
 Toy Drum  
 Tri.sml  
 T.Bls. *pp* *f*  
 Sml.Mtl.Pipe  
 13 Glassbowl  
 B.Dr.  
 Bng/Cng  
 Lrg.Mtl.Pipe  
 S.Cymb.  
 B.Dr.  
 Bng/Cng  
 Sml.Tub.  
 Kuniko Instr.  
 Staves  
 B.Dr.  
 Bng/Cng.  
 Sample  
 S.  
 M-S.  
 A.  
 T.  
 Bar.  
 B.  
 Glsp.2 *mf* *pp*  
 Vib.2 *mf* *pp*  
 Crot.2  
 High W.Blcks.  
 Cans  
 Tri Lrg.  
 T.Bls. *mf* *pp*  
 Sml.Mtl.Pipe  
 Dobaci  
 High T.Blck.  
 L.Dr. *p* *f* *l.v.*  
 Lrg.Mtl.Pipe  
 Chin.Cymb.  
 Med. T.Bl.  
 L.Dr. *mf*  
 Lrg. Tub.  
 Kuniko Instrument  
 5 Strings  
 Low T.Blck.  
 L.Dr. *sfz*

SCIENCE - MATHEMATICS

60

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowls  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

SCIENCE - MATHEMATICS

Glsp.1  
 Vib.1  
 Cro.1  
 Toy Drum  
 Tri.sml  
 T.Bls.  
 Sml.Mtl.Pipe  
 13 Glassbowl  
 B.Dr.  
 Bng/Cng  
 Lrg.Mtl.Pipe  
 S.Cymb.  
 B.Dr.  
 Bng/Cng  
 Sml.Tub.  
 Kuniko Instr.  
 Staves  
 B.Dr.  
 Bng/Cng.  
 Sample  
 S.  
 M-S.  
 A.  
 T.  
 Bar.  
 B.  
 Glsp.2  
 Vib.2  
 Cro.2  
 High W.Blcks.  
 Cans  
 Tri Lrg.  
 T.Bls.  
 Sml.Mtl.Pipe  
 Dobaci  
 High T.Blck.  
 L.Dr.  
 Lrg.Mtl.Pipe  
 Chin.Cymb.  
 Med. T.Bl.  
 L.Dr.  
 Lrg. Tub.  
 Kuniko Instrument  
 5 Strings  
 Low T.Blck.  
 L.Dr.

Musical score for page 21, featuring various percussion and melodic instruments. The score includes staves for Glsp.1, Vib.1, Cro.1, Toy Drum, Tri.sml, T.Bls., Sml.Mtl.Pipe, 13 Glassbowl, B.Dr., Bng/Cng, Lrg.Mtl.Pipe, S.Cymb., B.Dr., Bng/Cng, Sml.Tub., Kuniko Instr., Staves, B.Dr., Bng/Cng., Sample, S., M-S., A., T., Bar., B., Glsp.2, Vib.2, Cro.2, High W.Blcks., Cans, Tri Lrg., T.Bls., Sml.Mtl.Pipe, Dobaci, High T.Blck., L.Dr., Lrg.Mtl.Pipe, Chin.Cymb., Med. T.Bl., L.Dr., Lrg. Tub., Kuniko Instrument, 5 Strings, Low T.Blck., and L.Dr. The score contains complex rhythmic patterns, including triplets and sixteenth notes, with dynamic markings such as *ff*, *f*, *pp*, *l.v.*, and *sfz*.

61

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

13

The image shows a page of a musical score for a percussion ensemble and strings. The score is written in 13/8 time and begins at measure 61. The instruments listed on the left include: Glsp.1, Vib.1, Crot.1, Toy Drum (Tri.sml, T.Bls.), Sml.Mtl.Pipe (13 Glassbowl, B.Dr., Bng/Cng), Lrg.Mtl.Pipe (S.Cymb., B.Dr., Bng/Cng), Sml.Tub. (Kuniko Instr., Staves, B.Dr., Bng/Cng), Sample, S., M-S., A., T., Bar., B., Glsp.2, Vib.2, Crot.2 (High W.Blcks.), Cans (Tri Lrg., T.Bls.), Sml.Mtl.Pipe (Dobaci, High T.Blck., L.Dr.), Lrg.Mtl.Pipe (Chin.Cymb., Med. T.Bl., L.Dr.), Lrg.Tub. (Kuniko Instrument, 5 Strings, Low T.Blck., L.Dr.). The score features complex rhythmic patterns, including triplets and sixteenth notes, with dynamic markings such as *pp*, *p*, and *ff*. A large, diagonal watermark reading "SCIENCE - MATHEMATICS" is overlaid across the center of the page. At the bottom right, the number "13" is written within a bracketed section of the string part.

Glspl.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glspl.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

SCIENCE - MATHEMATICS

SCIENTIST  
Pythagoras

7 ♩=54  
soft mallets

62

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

soft mallets

motor on

(con arco)

FINISH SAMPLE

Tubular Bells

SCIENCE - MATHEMATICS



8  $\text{♩} = 108$  Molto ritmico

68

5

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowls  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Bcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Bck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Bck.  
L.Dr.

High Bongo

Medium High Bongo

Medium Low Bongo

High pitched Woodblocks

Log Drum High, with mallet

High Temple Block

Log Drum Medium, with mallet

Medium Temple Block

ks

ny sticks

impany sticks

p

p 3

p

77

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

High Conga

Medium High Conga

Medium Low Conga

Medium Temple Block

*f p*

*f p*

*f p*

*pp*

*pp*

*pp*

*p*

*5*

*5*

*5*

SCIENCE - MATHEMATICS

87

Gdsp.1  
 Vib.1  
 Cro.1

Toy Drum  
 Tri.sml  
 T.Bls.

Sml.Mtl.Pipe  
 13 Glassbowl  
 B.Dr.  
 Bng/Cng

Lrg.Mtl.Pipe  
 S.Cymb.  
 B.Dr.  
 Bng/Cng

Sml.Tub.  
 Kuniko Instr.  
 Staves  
 B.Dr.  
 Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Gdsp.2

Vib.2

Crot.2  
 High W.Bcks.

Cans  
 Tri Lrg.  
 T.Bls.

Sml.Mtl.Pipe  
 Dobaci  
 High T.Bck.  
 L.Dr.

Lrg.Mtl.Pipe  
 Chin.Cymb.  
 Med. T.Bl.  
 L.Dr.

Lrg. Tub.  
 Kuniko Instrument  
 5 Strings  
 Low T.Bck.  
 L.Dr.

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*mf*  $\overset{5}{\curvearrowright}$  *p* *mf*  $\overset{5}{\curvearrowright}$  *p*

97

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2

High W.Bcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Bck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Bck.  
L.Dr.

*SCIENCE - MATHEMATICS*

105

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blk.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blk.  
L.Dr.

*f p f p f p f p f p f 5*

*f p f p f p f 3*

*f 3 p f 3 p f 3 p*

*f 5 p f 5 p p*

This page contains a musical score for measures 114 through 119. The score is divided into two systems. The first system includes parts for Glsp.1, Vib.1, Cro.1, Toy Drum (Tri.sml, T.Bls.), Sml.Mtl.Pipe (13 Glassbowl, B.Dr., Bng/Cng), Lrg.Mtl.Pipe (S.Cymb., B.Dr., Bng/Cng), Sml.Tub. (Kuniko Instr., Staves, B.Dr., Bng/Cng), Sample, S., M-S., A., T., Bar., and B. The second system includes Glsp.2, Vib.2, Cro.2, High W.Blcks., Cans (Tri Lrg., T.Bls.), Sml.Mtl.Pipe (Dobaci, High T.Blck., L.Dr.), Lrg.Mtl.Pipe (Chin.Cymb., Med. T.Bl., L.Dr.), Lrg.Tub. (Kuniko Instrument, 5 Strings, Low T.Blck., L.Dr.), and 5 Strings. The score features various rhythmic patterns, including triplets and quintuplets, and dynamic markings such as *f*, *p*, and *f p*. A large, diagonal watermark reading "SCIENCE - MATHEMATICS" is overlaid across the center of the page.

122

Glsp.1  
 Vib.1  
 Cro.1  
 Toy Drum  
 Tri.sml  
 T.Bls.  
 Sml.Mtl.Pipe  
 13 Glassbowl  
 B.Dr.  
 Bng/Cng  
 Lrg.Mtl.Pipe  
 S.Cymb.  
 B.Dr.  
 Bng/Cng  
 Sml.Tub.  
 Kuniko Instr.  
 Staves  
 B.Dr.  
 Bng/Cng.  
 Sample  
 S.  
 M-S.  
 A.  
 T.  
 Bar.  
 B.  
 Glsp.2  
 Vib.2  
 Cro.2  
 High W.Blcks.  
 Cans  
 Tri Lrg.  
 T.Bls.  
 Sml.Mtl.Pipe  
 Dobaci  
 High T.Blck.  
 L.Dr.  
 Lrg.Mtl.Pipe  
 Chin.Cymb.  
 Med. T.Bl.  
 L.Dr.  
 Lrg. Tub.  
 Kuniko Instrument  
 5 Strings  
 Low T.Blck.  
 L.Dr.

Glsp.1

Vib.1

Crot.1

soft mallets  
motor on

*p*

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

with fingers >

*pp*

*ppp*

*pp*

*ppp*

*pp*

*pp*

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

motor on  
soft mallets

*pp*

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Bck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Bck.  
L.Dr.

*pp*

*p*

*pp*

*p*

SCIENCE - MATHEMATICS



140

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowls  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

with mallets  
*pp*

Tubular Bells  
*p*

soft mallets  
*p*

Tubular Bells  
*p*

*pp* *p* *pp* *p*

*pp* *p* *pp* *p*

*pp* *p* *pp* *p*

SCIENCE - MATHEMATICS

Glsp.1  
Vib.1  
Crot.1

Toy Drum  
Tri.sml  
T.Bls.  
Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng  
Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng  
Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng

*with wooden sticks*

*f p f p f<sup>5</sup> p f<sup>5</sup> p f p*

*f p p p p f p*

*f p f p f<sup>3</sup> p<sup>3</sup> f f p*

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

*High Wood*

*mf*

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

*f<sup>3</sup> p f<sup>3</sup> p f<sup>3</sup> p*

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

*p f p f p*

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*f<sup>5</sup> p f<sup>5</sup> p*

SCIENCE - MATHEMATICS

150

Gdsp.1  
Vib.1  
Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Gdsp.2

Vib.2

Crot.2  
High W.Bcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Bck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Bck.  
L.Dr.

SCIENCE - MATHEMATICS

156

Glsp. 1

Vib. 1

Crot. 1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng

Sample

S.

M.-S.

A.

T.

Bar.

B.

Glsp. 2

Vib. 2

Crot. 2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blck.  
L.Dr.

*f*

*f*

*f*

*f*

*f*

*f*

*f*

*f*

*f*

*f*

*mf*

*mf*

*mf*

*mf*

*mf*

*mf*

163

Glsp.1

Vib.1

Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

hard mallets

*f* hard m

*f* h

5

3

Glsp.2

Vib.2

Crot.2  
High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Blk.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg. Tub.  
Kuniko Instrument  
5 Strings  
Low T.Blk.  
L.Dr.

Tubular Bells

hard mallets

*f* hard mallets

*f*

*cresc.*

*cresc.*

*cresc.*

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167

Glsp.1  
Vib.1  
Crot.1

Toy Drum  
Tri.sml  
T.Bls.

Sml.Mtl.Pipe  
13 Glassbowl  
B.Dr.  
Bng/Cng

Lrg.Mtl.Pipe  
S.Cymb.  
B.Dr.  
Bng/Cng

Sml.Tub.  
Kuniko Instr.  
Staves  
B.Dr.  
Bng/Cng.

Sample

S.

M-S.

A.

T.

Bar.

B.

Glsp.2  
Vib.2  
Crot.2

High W.Blcks.

Cans  
Tri Lrg.  
T.Bls.

Sml.Mtl.Pipe  
Dobaci  
High T.Bck.  
L.Dr.

Lrg.Mtl.Pipe  
Chin.Cymb.  
Med. T.Bl.  
L.Dr.

Lrg.Tub.  
Kuniko Instrument  
5 Strings  
Low T.Bck.  
L.Dr.

SCIENCE - MATHEMATICS